POTENTIALS OF AN INTEGRATED APPROACH TO LAND-USE PLANNING AND ENVIRONMENTAL IMPACT ASSESSMENT, WITH PARTICULAR REFERENCE TO THE CURRENT TASMANIAN SITUATION

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Submitted in partial fulfilment of the requirements for the degree of Master of Environmental Studies

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September, 1994

DECLARATION

This thesis contains no material which has been accepted for the award of any other higher degree or graduate diploma in any tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by any other person, except where due reference is made.

Signed.....

ABSTRACT

Land allocation for development has a significant link with various forms of environmental impact. Consequently, environmental implications of development need to be appraised through mechanisms provided by effective planning systems.

An integrated approach to land-use planning and environmental management is the central theme in this research. The thesis discusses land-use planning systems and environmental management, and the question of linking EIA to such systems, with a view to supporting the argument that integration could contribute to better environmental outcomes.

The thesis sets the context by reference to other countries, particularly the United States and Britain. Under the planning system, EIA has been used in Britain to lessen pollution.

The discussion moves to the concept and practice of EIA, and to Australian land-use planning and environmental management at State and local levels. Attention is focused on recent efforts in favour of more integrated approaches. Sustainable development is also addressed because of its imperative to consider development and environment cohesively, and because it is increasingly determining new frameworks for planning and environmental management.

Within this context, integrated planning ideas are applied to analyse the new consolidated planning system in Tasmania. The finding of the study is that Tasmania's planning framework is well-designed, and a promising initiative towards achieving sustainability. However, planning mechanisms could be strengthened further by extending the requirement for the inclusion of environmental management tools, such as EIA and environmental audits (EA).

Environmental management mechanisms like EIA and EA, and associated tools such as state of environment reporting, can play a significant role alongside land-use planning to achieve sustainable development. Suggestions for improvement and the future development of Tasmania's integrated planning system are proposed to conclude the study.

ACKNOWLEDGEMENTS

I would like to specially thank my supervisor, Dr Jim Russell, for generously taking on the thesis and for his patience and constructive criticism and recommendations. Dr Jim Russell, again, deserves my gratitude for continuously and enthusiastically encouraging me during the period of compiling this thesis. Without his help, this work could not have been completed. I would like also to thank the friendly staff and students of the Centre for Environmental Studies.

Special thanks are also due to Chris Rees, Andrew Zacharek, and Juliet Chapman for both English language assistance and academic comments on my work. Much of the information in the analysis and discussion chapter was not publicly available, and I would like to thank ten interviewees for giving me their valuable time and their constructive comments and ideas.

I am most grateful to the Australian International Development Assistance Bureau (AIDAB) for financial support and other related help during two years and nine months in Tasmania.

I would like to thank the Thai Government, and in particular the Office of Policy and Planning, Interior Ministry, in which I have been working, for the great opportunity for further study. Special thanks are due to Mr. Pramoon Chanthrachamnong, the previous Director-General of the Office of Policy Planning, Mr. Sudjit Nimitkul, the former Deputy Director-General, Dr. Phornthep Phimolsathien, the current Director of the Rural Environmental and Natural Resource Management Division, and my colleagues for supporting my acadamic career.

Finally, I would like to express my gratitude to my parents and my older brother and sister for their enthusiastic and concerned long-distance encouragement and support during my study in Australia, which were both happy and stressful.

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CHAPTER 1 INTRODUCTION

1.1 Preamble

Land-use planning is ideally designed to accommodate social, economic and environmental functions. Planning systems, however, have generally focused on the physical and spatial aspects of land and development. The allocation of land has a significant influence on the spatial origin and distribution of waste and levels of pollution, since the exploitation of land and the wider environment are inextricably connected.

In some countries, such as Britain, land-use planning has a unique role in the control of pollution, and encompasses a wide range of mechanisms in environmental protection (Wood 1979). On the contrary, in some countries planning has failed to address environmental factors and the wider environmental consequences of development activities.

There has, however, been a development in thought on plan-based approaches to environmental changes induced by development, by incorporating environmental protection mechanisms, particularly environmental impact assessment (EIA). This theme was discussed in the work of Lichfield and Marinov (1977), for example, who explored ways of bringing land-use planning and environmental measures together. This consolidated approach has been widely recognized as a dynamic approach to environmental protection.

In addition, this perspective has been developed and addressed by a number of academics such as Fowler (1982) and Clark and Herington (1988). The theme of integrating environmental protection in planning systems has become a significant mainstream approach in various countries. In particular, the EIA aspect of environmental protection measures is widely recognized as an necessary element of environmental management tools alongside land-use planning (Fowler 1982).

In Britain, EIA has become a supplementary mechanism within the normal planning systems. In Australia, EIA is combined with land-use planning in Victoria under the *Planning and Environment Act* 1987, and in New South Wales under the *Environmental Planning and Assessment Act* 1979 (Fowler 1982). Recently, the Tasmanian Government has introduced this approach to replace

the previous unintegrated planning system (Department of Environment and Planning, C. 1992).

The integrated approach to land-use planning and environmental management has been adopted as a theme in this thesis, to explore the associated problems, potential, and progress, and the extent to which the model could make a contribution to better environmental outcomes.

To this end, the current Tasmanian planning reform is selected as a case study. Analysis from literature review and information obtained from key respondents are used to explain the new system, and to examine it, particularly in the context of sustainable development.

1.2 Study objectives

The primary objectives of this thesis are:

(1) to explore of land-use planning processes and their contribution to environmental protection;

(2) to study EIA processes and their use in controlling environmental problems;

(3) to explore the potentials of the integration of EIA and land-use planning; and

(4) to analyse these potentials and use them to evaluate and suggest improvement for the current Tasmanian land-use planning legislation and other related laws.

1.3 Methodology

To achieve the objectives of the study, the research methods employed include:

(1) an explanation of problems and progress associated with land-use planning and environmental management in general in the West through literature reporting and analysis;

(2) coverage, using selected literature, of the Australian context at State and Local levels; and

(3) an analysis of the Tasmanian situation through:

(a) explanation and assessment of the Tasmanian planning legislation; and

(b) interviews with selected key informants.

1.4 Boundaries and content of the study

The outcomes of this research are presented in nine chapters, including the introduction. In Chapter 2, a broad understanding of the phenomena of resource exploitation and environmental degradation, and how these interconnected issues have contributed to problems for humanity is sought through the literature. The discussion explores the consequent efforts, through a diversity of modes of thinking, to develop a course of action to allocate environmental resources more effectively on the one hand, and to minimize adverse environmental impacts on the other. Since the 1970s, a focus on environmental controls and resource management regulations has emerged in response to these problems. Land-use planning, on the other hand, has been associated in some countries closely with these issues, but not in others. In general, it has moved towards a more consolidated view of environmental pollution in connection with land-based development. This can be seen as progress towards concepts of environmental planning.

Chapter 3 is focused on international land-use practice in two countries, the United States and Britain. In Britain, land-use matters are regulated and managed within a close administrative relationship between the central and Local Governments. In contrast, in the United States, land-use issues are almost entirely a responsibility of Local Governments, and decisions on land-use have created significant environmental problems.

The literature-based analysis in Chapter 4 emphasizes the potential of EIA as one of the tools in environmental protection. It broadly reviews the extent to which EIA can play a significant role in the environmental protection agenda. The introduction of this measure has been widely accepted in many countries. In particular, EIA is recognized as a necessary tool for incorporation with land-

use planning to strengthen land-use related decision-making more effectively in the light of environmental considerations.

Chapters 5 and 6 explore environmental management and land-use planning practice in Australia. The enhanced roles of Australian Local Governments are the main focus in Chapter 5 in relation to a wide range of environmental issues. The role of the State and Local Governments in land-use planning are addressed in Chapter 6. This chapter particularly addresses some State environmental legislation which incorporates land-use and environmental matters in a single administrative framework, and which integrates EIA and land-use planning systems.

Chapter 7 broadly considers the development of thinking on sustainable development, which has become prominent on the international agenda. This agenda can be seen in the Principles of the recent Rio Declaration on Environment and Development which is closely linked with the theme of this thesis, for example in the concept of combining environmental protection as an integral part of the development process. These two issues should not be addressed in isolation. In addition, EIA is recognized as an important environmental protection tool for assessing the environmental implications of proposed developments (Johnson 1992). This concept has been adopted as one of Australia's national strategies for the next century. This strategy has also flowed to the States. For example, in Tasmania the new legislation in environmental planning and resource management has been reformed in response to the concept of sustainable development. One of the proposed planning reforms in Tasmania is an integration of land-use planning and EIA.

In Chapter 8, Tasmania's planning revitalization, which encompasses a combination of planning and environmental management, is broadly analysed and discussed. The evaluation is based on the inefficiencies of the previous planning system and environmental protection mechanisms in relation to the lack of integration. Perceived prospects and obstacles of the present planning reforms are then discussed, including a wide range of obstacles which might impede these reforms. To end the discussion, the prospects for Tasmania's integrated approach to land-use planning and environmental management is addressed in depth by focusing on the State's integrated approach to achieving sustainable development.

In conclusion, certain possibilities for improvement and consolidation of Tasmania's local integrated approach to planning reform are suggested based on the author's case study. In addition, wider conclusions are drawn on the potentials of integration which might be adopted and applied effectively by other countries to achieve better environmental outcomes.

CHAPTER 2 ENVIRONMENTAL PROBLEMS AND LAND-USE PLANNING: CONNECTIONS AND RESPONSES

2.1 Introduction

Natural resource depletion and environmental deterioration have been the result of human activities. There are three main ingredients. These are an increase in the human population, the consumption of goods and services per capita of population, and impacts on the environment per unit of goods and services (Ashby 1972). Population growth implies more consumed resources, and repercussions for the environment are an inevitable end result.

Environmental problems have awakened social consciousness. A clean environment has become higher on people's list of priorities, and pollution has become one of the most prominent social problems (Ashby 1972). Growing attention to environmental pollution was partly a consequence of a number of individual workers, such as Rachel Carson in her prominent book "Silent Spring" on the widespread use of pesticides. This work helped lead to the passage of over forty pieces of legislation related to the regulation of pesticides in the United States (Gunningham 1974).

Gunningham (1974: 3) stated that "an account of the evolution of pollution legislation must include those precipitating factors which by themselves cannot explain the passing of legislation, but without which the whole ecological movement might not have begun". Environmental planning and environmental legislation have been developed to address environmental problems, with different disciplines and various modes of thinking applied to conflicts between environmental conservation and resource-based development.

Land-use planning in urban areas in particular, is ideally designed to seek social justice and concern for the general welfare of society by directing any modification of land use to accommodate the economic and social welfare of the community (Graham 1986). It is employed to control patterns of urban development which consume large areas of land and can lead to a decline in the quality of the environment.

2.2 Pressure on the environment

The world has seen the growth of strong environmental, conservation, and ecological movements under the banner of environmental protection. The aims are to restrict uncontrolled economic development, to conserve environmental resources, and to prevent environmental deterioration. A scarcity of resources, both renewable and non-renewable, and many environmental problems are widely seen as very serious. Renewable resources are those which can be regenerated over a time period of about 10^0 to 10^2 years. Non-renewable resources may only be replenished over geological timescales, and their deposits are certainly finite (Selman 1992).

The exploitation of natural resources for human consumption may result in repercussions for ecosystems in one way or another. For example, the clearance of tropical moist forest contributes to the destruction of large areas of wildlife habitat on which plants and animals rely, and may lead to soil erosion following logging. Also the conversion of land, particularly in urban areas for development purposes, may result in problems of urban pollution.

L. White, Jr. thought that the fundamental source of resource exploitation has been traditional Judaeo-Christian attitudes (Berry and Horton 1974). These attitudes supported the belief that it was God's will that man exploited nature (O'Riordan 1981). In support of this point, Sheldrake (1990: 25) quoted from the Christian Bible, 'After creating the first man and woman, God blessed them and said to them, "Be fruitful, and increase, fill the earth, and subdue it: and have dominion over the fish in the sea, the birds of the air, and over every living thing that moves on the earth"'.

According to O'Riordan (1981), humans' perception of dominating nature, later associated with the rise of modern science in the sixteenth and seventeenth centuries in Western Europe, significantly contributed to creating current ecological problems. Gandhi added a perspective on human needs, "Earth provides enough to satisfy every man's need, but not for every man's greed" (Schumacher 1974: 26).

Natural phenomena have been transformed into man-made commodities, and waste products from industrial manufacturing processes and human consumption have accumulated (Barkey and Seckler 1972; Tisdell 1991). Waste products can undermine the quality of human life. The German Green Party

pointed out that "the very basis of people's lives is endangered by nuclear installation, by air, water and soil pollution, by storage of dangerous waste products and by the squandering of raw materials" (Goodin 1992: 65).

The process of economic development, associated with population growth, has caused environmental degradation and resource depletion. This has become an issue at the top of international and national agendas on development related concerns (Bojo, Maler and Unemo 1990). It was conservatively projected that the world's population will accelerate to seven billion people by 2000; of these, 90 percent will be in the world's developing countries (Tisdell 1991).

Additionally, over 50 percent of the world's population will live in cities by the year 2020 (Downton 1991). In the developed world, currently more than 70 percent of the population lives in urban areas in which a high proportion of economic, administrative, and political power is concentrated (Kivell 1993). No single factor contributes more to environmental deterioration in less developed countries than rapidly increasing population (Bojo, Maler and Unemo 1990), although it is clear resource distribution plays an important role in these matters.

Generally, the modification of natural resources can be classified into three types of resource-based human activities: the production and use of resources, particularly for food; the amenity use of natural resources for the protection of natural beauty and wildlife, and for recreational opportunity; and the change of open land for industrial purposes (Selman 1992). All of these factors may have significant impacts on the environment, directly or indirectly. For instance, the construction and operation of site facilities for industrial activities may cause such predictable environmental damage as polluted air, water course contamination, and land-site degradation.

The exploitation of land-based resources responds to community welfare through economic and community development. Pressures on resources have dramatically intensified both in urban and rural areas. Table 2.1 (p. 10) shows some major aspects of pressure on natural resources, and the resulting consequences for the environment and humanity.

In summary, human existence relies on nature as its life support system. Population growth, which usually implies more consumption, results in depletion of existing natural resources. Unwise use of resources may create

problems for not only our generation, but also future generations. In addition, environmental problems, which have proved to be the cumulative consequences of resource conversion for human demand, have become a threat to humanity. As a result, it is widely acknowledged that the environment must be safeguarded through achieving the sustainable use of natural resources with the minimum of adverse impacts on any given ecosystem.

2.3 The emergence of environmental planning

2.3.1 Diversity of environmental planning

In the late 1960s and early 1970s, environmental problems had been studied systematically to determine courses of action to more effectively allocate and distribute environmental resources (Briassoulis 1989). Since then concepts of environmental planning have been emerging. Environmental consciousness has increased to such an extent that the public has become involved in conflicts over environmental issues. This has resulted in ambitious programs to bring escalating environmental deterioration under control (Briassoulis 1989).

Over the last twenty years, the environmental movement in both Australia and the United States has grown. Many harmful activities have been abandoned or modified to reflect more sensitive environmental values, some wildlife has been protected, and sometimes major efforts made to alleviate air and water pollution (Andreen 1992). In the United States, the rapid emergence of ecology as a national issue and public involvement in the environment have become more obvious. Public opinion recorded by Erskine in 1972 reflected this fact:

> a miracle of public opinion has been the unprecedented speed and urgency with which ecological issues have burst in American consciousness. Alarm about the environment sprang from nowhere to major proportions in a few short years. When the first polls on pollution appeared in 1965, only about one in ten considered the problem very serious. Today most people have come to that realization (in Saarinen 1976: 198).

The number of worldwide movements to protect the environment and natural beauty and amenity has increased sharply. For instance, the Sierra Club had a membership of about 7,000 in 1952, and 100,000 in 1970 (Saarinen 1976). Environmental planning has appeared and become an important mechanism to safeguard and enhance the environment (Slocombe 1993). In the United States,

Table 2.1: Some aspects of critical pressures on natural resources

Pressures on natural resources	Associated problems
1. Population and health	Growth of world population Water-related diseases in developing countries
2. Human Settlement	Rapid growth of urban population and urban areas Waste generation from cities Environmental, social and political pressures caused by megacities
3. Food and agriculture	Growing levels of hunger and malnutrition Increase in pesticide-resistant pests Declined soil fertility
4. Forests and farmlands	Clearance of tropical forests Conversion of farmland to other uses Soil erosion
5. Energy	Economic dependence on fossil fuels and nuclear power Nuclear wastes/Greenhouse gas
6. Oceans and Coasts	Pollution from ocean dumping, oil spills, and land runoff Reclamation of coastal wetland

Source: Selman, P., 1992; *Environmental Planning: The Conservation and Development of Biophysical Resources*; P.C.P., London.

moves towards environmental planning emerged with the increasing concern for the natural and physical environment in the late 1960s, and became institutionalised in the 1970s with the passage of the *National Environmental Policy Act* 1969(Alexander 1987). According to Briassoulis (1989), environmental planning emerged as a functional area within the wider discipline of planning. It was accepted that the environment has multi-faceted problems, and action to solve these can be complex.

Not only do environmental planners need evaluation from a wide range of such specialist disciplines as geology, ecology, sociology, law, economics and engineering, but they also need to listen to public opinion. Combining the approaches of these various disciplines can be very difficult.

The engineering approach is to break down a problem into smaller ones and to devise a structural solution to each sub-problem, whereas political science focuses on the role of government using public policy instruments as mechanisms. The economic mode tries to respond to environmental externalities and to reform the market to foster the use and allocation of resources through such market-based approaches as pollution taxes (Briassoulis 1989).

Levy (1988) commented that environmental planning covers a wide range of concerns, including the diversity of disciplinary perspectives, having to do, generally, with minimizing the damage that human activity does to the natural environment. Additionally, a component of the environmental planning approach is to analyse the intricate interrelationships between human activities and the environment (Kozlowski 1986).

Generally, planning is broadly concerned with facilitating the fulfilment of aims and policies, employing a strategic direction (Selman 1992; Hudson 1979). Alexander (1981) pointed out that irreplaceable resources could be devastated by unplanned development. There are a number of planning definitions addressed by academics, for example, "planning is future-oriented, and thus optimistic, for it assumes man's ability to control his own destiny, at least within certain limits... Planning is done by human beings for human beings... It is a process of human forethought and action based upon that thought" (Chadwick 1971: 25).

Alexander (1987: 454) reviewed definitions of planning, concluding that "planning is the deliberate social or organizational activity of developing an optimal strategy of future action to achieve a desired set of goals, for solving novel problems in complex contexts, and attended by the power and intention to commit resources and to act as necessary to implement the chosen strategy".

More specifically, planning academics who perceive planning as decision-control consider it as the formulation of acceptable proposals, using existing knowledge and given powers at starting points. Argument, questions, and some aspects of the problem from given proposals have to be raised and considered systematically in a form of rational thought in which the evaluation of alternatives is in light of their effects - desired or undesired (Faludi 1982). Basically, however, whatever way planning is defined, it embraces a commitment to the ultimate delivery of chosen policies, and to the achievement of sets of objectives and goals.

More importantly, public interest or community goals are a cornerstone of any planning theory. Unless society has goals, the task of theory building cannot begin, as plans are proposals for concerted action to achieve the goals of the community. In addition, planners cannot count on a hypothetical invisible hand, nor claim justification on the basis of their own judgements of the public interest (Altshuler 1965).

Briefly, the task of distributing natural resources, together with controlling any environmental impacts has been a continuous challenge for environmental planners. Approaches to solving environmental problems are intricate, since they have to work with many disciplines which have different modes of thinking. A major principle of planning is to respond to community goals in achieving problem solving.

2.3.2 Framework and approaches to environmental planning

Environmental problems cannot be solved by either technical approaches, or statutory procedures *per se*. Broader social and political structures, which influence the ability to respond, have to be considered.

According to Selman (1992), opinions of planning researchers and practitioners fall into three broad complementary perspectives that encapsulate current thinking on environmental planning. The first assumes that problems arise

from the competition of too many interest groups for scarce resources. This is associated with such environments as urban fringes with pressures on land use, and densely populated countries (Selman 1992). The urban fringe is characterized by land in progressive states of transition from rural to urban use. This can result in specific types of damage to vegetation, soils, air, and water (Bryant, Russwurm and McLellan 1982).

The second view concerns socio-economic factors where the operation of the market economy is distorted by government interference and the actions of various power brokers. The last perspective centres on structures of government which influence decisions about the environment (Selman 1992).

In addition, Newby (1990) summarised the treatment of environmental concerns in planning systems in four phases:

(i) from the mid-1880s when the emphasis was on preservation of a pre-industrial past;

(ii) during the inter-war years when the emphasis was on combining preservation from development and regulation of development, particulary in relation to land-use planning, pollution control and the loss of material or historic features;

(iii) from the early 1960s, when environmental consciousness was provoked by a renewed realization of limited resources, accompanied by a rapid increase in knowledge of the environment; and

(iv) by the 1990s, when 'ecology' replaced 'amenity' as the focus of much public debate.

The theory and practice of environmental planning have contributed to various approaches to formulation and implementation of solutions to environmental problems. The following approaches (see Table 2.2) illustrate different modes of thought as to how they are defined and analysed.

Basically, each approach seeks a means to problem-solving through different thinking and methodologies. However, one basic idea of environmental planning is to ensure that ecological considerations are included in the management of human activities (Slocombe 1993).

Table 2.2: The wide range of approaches to environmental planning

Planning approaches	Characteristics
1. Comprehensive/ Rational planning	Solutions to environmental problems require holistic analysis, systematic generation of solutions, and coordination among the relevant institutions and administrative bodies. Requires identification and formulation of alternative solutions to the problem studied, and selection of the best solution that meets objective scientific criteria. This approach is adopted in land use and regional planning with a principal focus of environmental protection.
2. Incremental planning	Environmental problems are given attention only when they reach crisis proportions. Belief that environmental problems are beyond human capacity to control in one unified policy.
3. Adaptive approach	Solutions to problems are developed, based on predictable future events. The need for flexibility at each step of the planning process (grounded in system analysis) to allow for changes in direction as necessitated by changes in goals, revised future predictions, and availability of new evidence.
4. Participatory/ Consensual planning	Represented by the growing emplasis on and application of environmental mediation and negotiation to the resolution of environmental conflicts. Premised on a pluralistic view of reality, voluntary participation of interested parties,

	and the possibility of win-win solutions in environmental controversies.
	Regards solutions to problems as sought in common by affected groups and thusgiven the necessary legitimacy, which guarantees their enforcement.

Source: Briassoulis, H., 1989; Theoretical Orientations in Environmental Planning: An Inquiry into Alternative Approaches, *Environmental Management*, **13**, 381-392.

The rational approach attempts to develop resource conservation and development planning in a way that the long-term negative effects on environmental quality are reasonably minimized through studying the causes of degradation and depletion of the natural environment (Kozlowski 1986). This approach is comprised of four basic elements: goal-setting, identification of policy alternatives, evaluation of means to ends, and the implementation of decisions (Hudson 1979). According to Kozlowski (1986), there are two components of the process of rational planning. These are:

(i) physical planning, established to determine an appropriate physical relationship between the environment and development activities to reach a conservation goal; and

(ii) an institutional plan designed to combine people, agencies, and finances to focus on specific conservation problems.

Adaptive planning has become a process of environmental planning. This is a process of learning from past mistakes. Planning policy has to be formulated and implemented, with planned evolution into the future. In the land use planning domain, this approach has become necessary when broad policies have to be applied, and must respond to the demands of the lower tier of government. In addition, land use planning, in theory, must be adequately resilient to modify established uses both by correcting mistakes and facilitating changed needs (Briassoulis 1989; Golany 1976).

The participatory planning approach has arisen in the environmental planning domain due to a considerable increase in the number of pressure groups seeking to influence planning and policy-making. This paradigm entails

interested public participants being given an opportunity to address their own environmental concerns, and requires information channels in decision-making to be tuned so that the public can become an important contributor to the information upon which policy is decided (Ingram and Ullery 1977). It is based on multiple views of reality, and the voluntary participation of interested groups in environmental problems through mediation and negotiation in which most involved parties agree upon the need for an environmental solution (Ingram and Ullery 1977).

None of the theoretical orientations in environmental planning are seen by Slocombe (1993) as suitable for considering multifaceted environmental problems. Aspects of environmental planning theory are still hybrid, since each approach has its own strong and weak points in the planning processes. Participatory theory, for instance, has worked efficiently with small scale and local problems, whereas broad-scale issues are involved with scientific evidence which reinforces ideological disagreement (Briassoulis 1989). However, whatever approaches are combined, without public participation "no step in the planning process can be executed successfully and effectively" (Briassoulis 1989: 389).

In summary, environmental planning theory has evolved to determine solutions to environmental problems, using different approaches to safeguard the environment for this and future generations. The environmental planning literature suggests that there is no single neatly packaged approach, and views environmental planning as eclectic, evolving fields of practice which are hybrid and experimental.

2.4 Consolidating connections: land use, pollution, and planning control

2.4.1 Introduction

Conflicts between environmental conservation and development activities have inevitably arisen. In urban areas, generally, the capacity of land suitable for urban-based development to meet future demands varies. It depends on the area of land available for development, the suitability of development on that land and possible impacts of given development on adjacent areas (Parliament of the Commonwealth of Australia 1992).

The allocation of land reflects the choices and options of society, and the need to evaluate the economic, social and environmental implications of these choices. In addition, plans for land distribution for given development should be based on compatible use, in which a specific land use is prohibited unless it complies with environmental constraints. Table 2.3 gives some guidelines on how development activities and other uses can be governed in environmentally sensitive areas.

Table 2.3: Principles of compatible relationships between land and development

Conservation value	Development compatibility
Unique natural area	Develop for scientific, educational or tourist values but with strict protection of indigenous flora and fauna. Limited non-destructive uses may be permitted, e.g., controlled hunter-gathering or sensitive culling.
Critical habitats on which the biological productivity of a much larger area depend, e.g., rainforest	Limited economic /touristic uses may be compatible if carefully planned and controlled to protect wildlife areas.
Heavily disturbed areas and non-productive sites with few wild species and low wildlife potential	Develop under sound land and resource management principles

Source: Selman, P., 1992; *Environmental Planning: The Conservation and Development of Biophysical Resources;* P.C.P., London.

One approach is to protect valuable areas by restricting some forms of activities in these areas so as to avoid adverse damage to the environment. However, in highly valued areas, accessibility may be allowed in order to provide opportunities for public enjoyment through recreation and tourism. The

location, quality and level of activities, on the other hand, have to be tightly restricted particularly in highly environmentally sensitive sites.

Urban-based land, as a valuable resource which in turn might become a major source of urban environmental pollution, can usually be utilized by separating parcels of land under a broad classification of appropriate use. For instance, residential, industrial, commercial and education uses are indicated through zoning, an instrument to influence change and deter non-consistent uses (Ratcliffe 1974).

In short, patterns of land use create conflicts among users which Friedman (in Bryant, Russwurm and McLellan 1982) called the 'collective phenomenon', or what economists describe as 'externalities'. It means that land use on one property may affect other people in the vicinity or on adjacent properties. Generally, land-use conflicts can be classified in terms of individuals or larger social groups, present and future demand, and economic or non-economic purposes.

2.4.2 Principles of land-use planning

Land-use planning has been recognized as a basic approach in city planning. It does not present a detailed program for curing civic ills, nor deal with all city problems. However, it presents goals towards which public planning policy should be directed, and emphasises those that can be tackled or resolved most directly by the regulation of the use of land (Altshuler 1965).

Organisation and management of the human environment has been called town and country planning, town planning, and physical land use planning by different people and at different times (Ratcliffe 1974). The formal system of town planning concerns the allocation of land between competing uses, and planning is therefore a reconciliation of social and economic fulfilment, and of private and public objectives. It is, in theory, conducted in such a manner that the nature of the built environment and community welfare are achieved harmoniously, with efficient outcomes (Ratcliffe 1974).

According to Ratcliffe (1974), the aims of town planning are combined with a number of processes so as to rationalize a sensible and acceptable unification of conservation and exploitation of land. These involve "the process of establishing the desires of the community, formulating them in a manner that

facilitates comprehension and discussion, preparing a policy for their adoption, regulating the degree and proportion of public and private investment, guiding the provision of public services, initiating action when necessary, and continually examing the effect of the adapted policy, making adjustments if required" (Ratcliffe 1974: 4).

There is a wide range of discipline-based approaches to land-use planning. McLoughlin (1992) classified several approaches as follows.

(i) An architectonic or urban design perspective. This is one of the oldest-established ways of thinking about town planning. Town planning is seen as primarily the creation or remodelling of built form, and the important standards for evaluating successes or failure are aesthetic.

(ii) A geographic perspective. This focuses on the patterns of human occupation and the use of land.

(iii) An institutional perspective. This approach emphasises the power of individuals and that of various public and private sectors.

(iv) The economic study of town planning. This is characterised by the formal rigour of statistical and mathematical perspectives.

The technically-based architectural approach to urban planning has long produced solutions to urban problems that are physical in character. It uses land-use maps, zoning, density control, building regulations and planning standards. It has a significant role in contributing to the development of a comprehensive approach towards town planning in which the overall desires of the community are established as the goals and objectives. It influences or directs all the activities connected with the physical environment, and is founded upon the notion of public benefit and amenity (Ratcliffe 1974).

Zoning is one technique of land-use regulation used as a way of preventing mixtures of land-use that would harm market value. It is also a method by which a given development plan segregates parcels of land or areas of a town, and gives them a broad classification of compatible uses such as residential, industrial, commercial and educational. It is a basic instrument of land-use regulation influencing non-comforming uses of land (Altshuler 1965; Ratcliffe

1974). In addition, it provides legal control over the land-based development process.

Another land-use control mechanism is subdivision regulation which conditions the way in which raw land is subdivided and placed on the market for development. Levy (1988: 102) decribed this practice as follows:

> Subdivision regulations control the manner in which blocks of land over a certain size may be converted into building lots. Specifically subdivision regulations provide that before building lots can be sold or the owner can make improvements, the municipality must approve a plan (map) of the property. The ordinance will require at a minimum that the map show streets, lot lines, and easements (rights of way) for utilities. It also will stipulate what improvement must be made before building lots can be sold or before building permits may be granted...

Land-use planning is undertaken through land-use regulation to carry out physical development within the arm of the planning law and institutions which are established to safeguard both the conditions of development of land and the environment. According to Healey and Shaw (1993), regulatory land-use planning has an important function in:

(i) tackling a wide range of site-related issues, particulary the conservation of resources and environment, and in promoting locational patterns which minimize energy and the distribution of pollution;

(ii) assuring that development does not exceed environmental capacity;

(iii) giving due weight in environmental, social, and economic considerations;

(iv) fostering and administering the quality of the local environment; and

(v) handling the local impacts of development.

In Britain, for example, the town planning law is based on a combination of development plans, which set out the preferred pattern of land use; and development control, which ensures that the application of planning permission conforms to the planning framework. Development plans are a

mechanism for consideration when a development decision is made (Selman 1992; Healey 1983). The environmental implications of development may become subsequent issues. For example, air pollution may originate as a result of altered land. It should therefore be required that environmental impacts be considered in land-use planning.

In short, a number of mechanisms of land-use planning are used for development activities. These are associated with development control systems which are established to rationalize the use of land on the one hand, and to limit adverse effects on the environment on the other. Government intervention in patterns of land use in the form of land-use regulations come under the framework of land-use planning.

These regulations institutionalize the allocation of land among users, with the aim of achieving the desire of community welfare and the built environment at the same time. Generally, land-use regulation is an attempt to reconcile two contradictory functions: accumulation, i.e., the creation of favourable conditions for capital growth and investment; and legitimation, i.e., the promotion of equity and social harmony (Kivell 1993). However, there are different views from various disciplines as to how to focus the management of city-based land. These views are generally aimed at the same end result mentioned above.

2.4.3 Sources of pollution

It is accepted that the allocation for land development has a significant influence on the spatial origin and distribution of waste and pollution levels. In general, land-based development may produce such undesired effects as air pollution, water pollution, land contamination and noise pollution. Air pollution can be defined as follows:

> Air pollution means the presence in the outdoor atmosphere of one or more contaminants, such as dust, fumes, gas, mist, odour, smoke, or vapor, in quantities, of characteristic, and of duration such as to be injurious to human, plant, or animal life or to property, or which unreasonably interfere with the comfortable enjoyment of life and property. (Faith and Atkisson 1972: 2)

There are two major aspects of air pollution, namely primary and secondary pollutants (Baldwin 1985). The first are agents added directly to the atmosphere by human activities, such as sulphur oxides and carbon oxides. The

latter are harmful chemicals constituted in the atmosphere from reactions between primary pollutants and natural fractions of the air, for example, ozone and smog (Baldwin 1985).

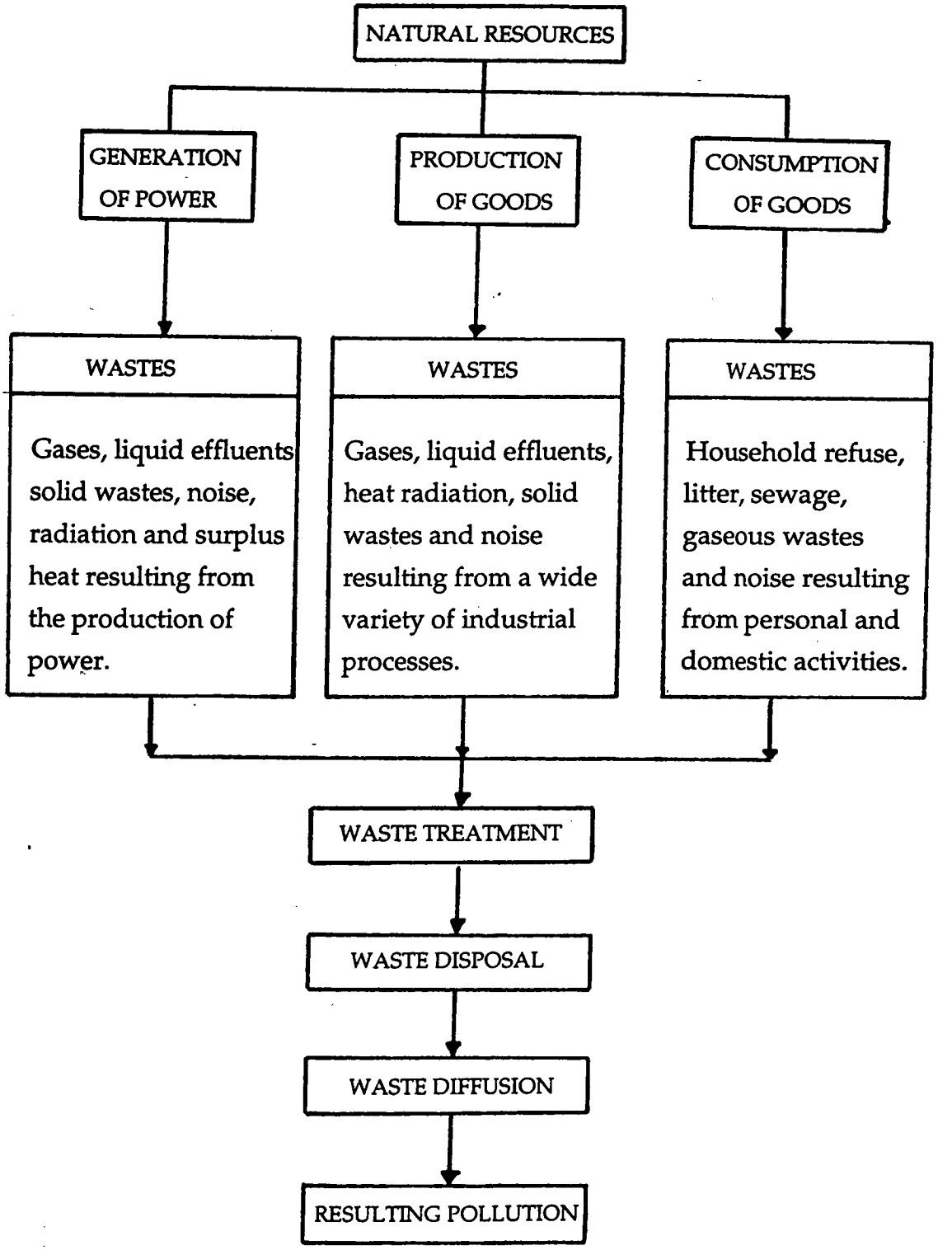
There is considerable evidence that air pollution from the combustion of fossil fuels, both oil and coal, has been undermining the health of humans, other animals, vegetation and materials (Postel 1984). Coal contains sulphur and so produces sulphur dioxide, and its inefficient combustion leads to the production of small particles of dust. This leads to the serious urban and rural air pollution which was well documented as the London smog of 1952, a major disaster which claimed 4,000 lives (Faith and Atkisson 1972).

In the case of water pollution, its emission can be divided into two sources, point and non-point. Point sources of polluted water are identifiable places, such as pipes. An example is pipes from industrial and municipal sewage treatment plants. Non-point sources of pollution have no single identifiable outlet, such as urban runoff from storm sewers, and run off from agricultural and construction areas. Particularly in rural areas, the most widespread non-point pollution is agricultural runoff which can contain sediments, pesticides and fertilizers (Baldwin 1985).

The relationship between land use patterns and the consequences of environmental pollution are clear but not always recognized. Solid waste disposal sites and waste water treatment plants are land-based sources of polluting emissions. The associated problems from these sources can be divided into air pollution (smoke and odours), and pollution of ground and surface water. The waste-generated factors are mainly derived from three main sources: municipal, agricultural and industrial waste. In 1967, for example, Californian solid-waste production amounted to 71,502,000 tons. Thirty-two percent of this was municipal waste; 48.8 percent agricultural waste, and 19.2 percent was industrial waste (Berry and Horton 1974).

Basically, pollution may arise at any stage in the economic system. These include the extraction of raw materials, the generation of energy, production processes, and the distribution and consumption of goods (see Figure 2.1). Adverse impacts from these sources can be multiple. For example, effluent from sewage treatment plants may impact on a river's fish population and decrease its potential for recreational activities (Miller and Wood 1983).

Figure 2.1: Pollution: virtually all stages affect land, and require the allocation of land through land-use decisions and planning



Source: Adapted from Wood, C., 1976; *Town Planning and Pollution Control;* Manchester University Press, Manchester.

The result of turning natural resources into end-products is often polluting wastes which originate at different stages of the process, and their consequences can take many forms and result in different environmental damage. Pollution and associated problems have a coherent relationship. The locations where natural resources are modified into final products can be sources of pollution. Most sources of pollution are based on land, so the polluting potential of a development should determine whether or not it will be allowed at a particular location. In addition, mechanisms can be introduced to mitigate or minimize any impact on the environment.

2.4.4 The role of land-use planning in controlling pollution

One view of land-use planning is the control of physical development by planning laws and statutory administrative institutions. In the British model, for example, land-use planning refers to the regulation of a set of objectives through the use of rational principles reflecting policy direction. This is supervised by practitioners who call themselves 'planners' (Lichfield and Marinov 1977; Healey, McDougall and Thomas 1982). In respect of this, Healey (in Faludi 1987) differentiated five characteristics of land allocation policies in the land-use planning domain, including

(i) coordinating substantial development or redevelopment;

(ii) promoting development;

(iii) revitalising social and economic programs;

(iv) protecting the interests of social groups by means of restrictions and policies; and

(v) conservation policies.

Socio-economic and environmental considerations are, ideally, balanced within policy planning. Land-use planning is designed to facilitate these sorts of activities. It can be used to prevent or minimize waste discharges and restrict the number of new sources of pollution.

Development control, as an instrument for land-use control, can be designed to manage those development activities with pollution implications in order to

influence pollution loads and their distribution. Development control is usually conferred on planning authorities with three options for coping with pollutants arising from new development. These include granting planning permission unconditionally, with conditions, or refusing development proposals (Miller and Wood 1983; Wood 1979).

However, it is essential to recognise that land-use planning alone can never be an exclusive instrument of pollution control. It mostly only prevents the juxtaposition of polluting land users (e.g., industrial) and sensitive land uses and restricts both types of development to mitigate the results of pollution (Wood 1986). Generally speaking, the elemental role of land-use planning is mininizing pollution by the spatial division of inconsistent land use, such as the separation of residential or similarly sensitive development from industrial plants (Miller and Wood 1983). Planning authorities usually have such powers in deciding the location of the polluting processes. An example of this can be seen in the British model (Wood 1976).

In a pollution control process, according to Wood (1976) (see Figure 2.2), land-use planning becomes an instrument for minimizing environmental pollution as follows.

(i) The location of development can be controlled by determining whether or not given development proposals will be permitted on a particular site.

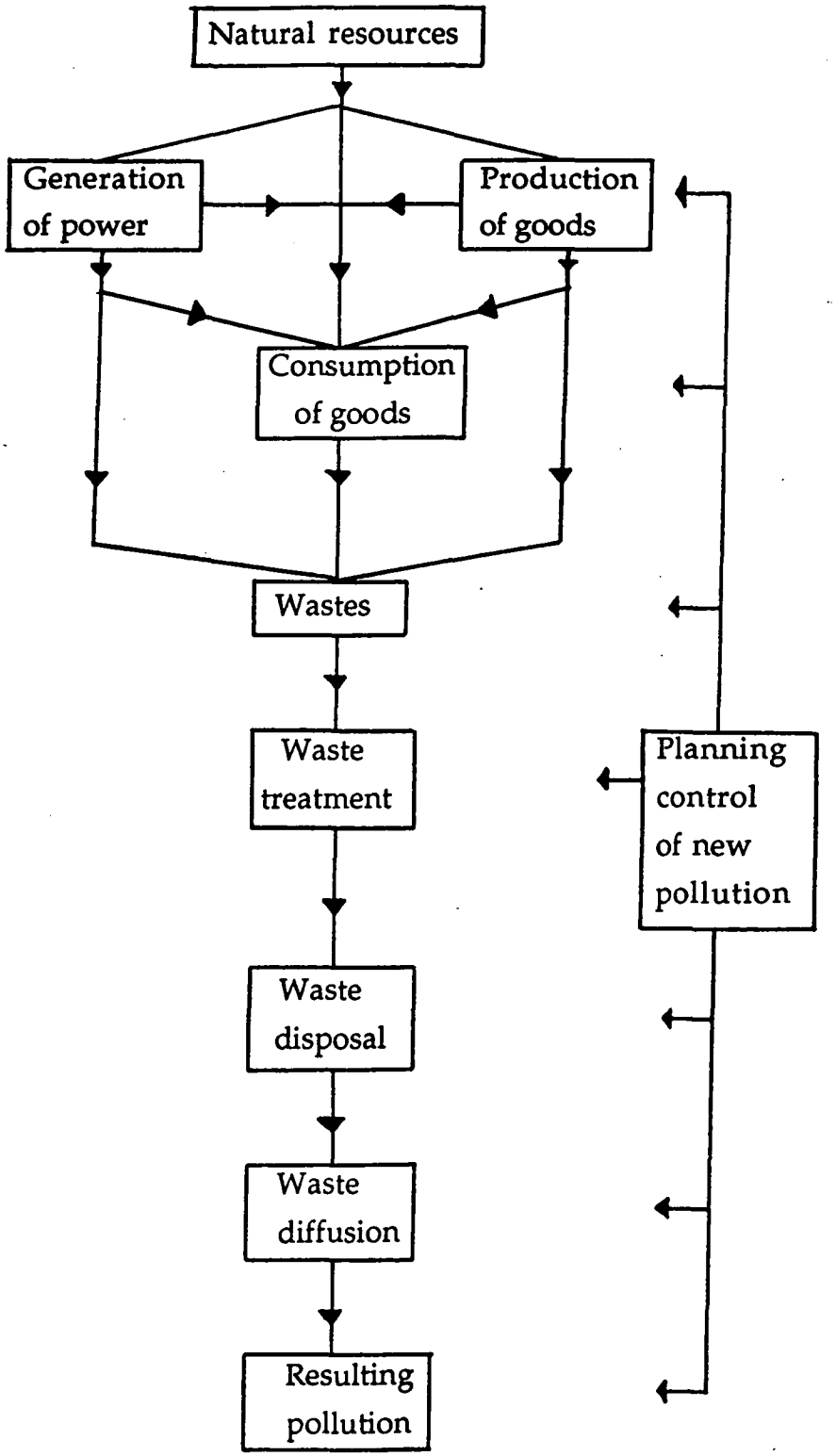
(ii) The process by which a particular product is manufactured can be controlled, to ascertain whether and how it is made, such as control over process noise by imposing planning conditions.

(iii) The method of treatment of waste can be controlled to ensure that factory treatment of appropriate specifications is installed.

(iv) The disposal of wastes can be controlled by the choice of site, e.g., control over location of waste disposal activities.

Finally, land-use planning is a method of mitigating pollution. Even though the nature of production cannot always be directly controlled by the planning process, the locations at which they are situated can. In addition, when allocating land, for example, for residential areas, planning controls still have a

Figure 2.2: The pollution process and its control



Source: Wood, C., 1979; Land-use Planning and Pollution Control, in O'Riordan, T. and R'Arge, R.C., (eds)., *Progress in Resource Management and Environmental Planning (Volume 1)*, 281-315; John Wiley & Sons, New York.

dominant role in determining new road alignments, and also possess some control over the existing roads, thus influencing traffic pollution (Wood 1979).

In brief, land-use planning influences various stages in the pollution process. Most importantly, it plays prominent role at the first stage of examining the nature and location of new development and of redevelopment, since land-based developments are undertaken by land use regulation. On this point, Wood (1979: 282) stated that "because pollution originates as waste from production and consumption activities, one of the key variables in pollution control - the geographical point at which additional waste is created - is determined once the location of these activities has been established".

2.5 Conclusion

Environmental conservation and resource-based development are sometimes at odds. The first offers a perspective of the natural environment as a life support system without which human welfare might not exist. The latter is concerned with how resources are utilised in response to human need. This, in turn, may have adverse impacts on the environment and, of course, humanity itself, since the modification of resources and environmental amenity are interconnected.

Social consciousness of the surrounding environment and the ongoing development of environmental planning has tended to make society pay more attention to take care of the environment. Nonetheless, approaches to environmental problem-solving show a variety of discipline-oriented alternatives. Although these different approaches may have the same aim to further community well-being, the environment has multifaceted problems and any solutions are complex.

Land-use planning *per se* is designed to resolve and reconcile land-related problems, such as socio-economic and environmental problems. There is available for the implementation of such plans a range of tools such as zoning. This has had an important influence on the spatial origin of residuals and their distribution.

Roles of land-use planning in relation to environmental protection can be seen in some countries, such as Britain, where planning has incorporated many environmental protection measures. For example, environmental implications of land-based development can be restricted by land use mechanisms to ensure

that development does not exceed environmental capacity. In some places, for instance, in Tasmania, land-use planning has long been established as a separate function from other environmental protection measures. However, within the new planning legislation, there is an attempt to change this (fully discussed in Chapter 8).

Plan-based approaches to preventing environmental damage are recognized as a helpful mechanism. In more recent times, on the other hand, there have been initiatives to consolidate land-use planning. The potential for environmental protection tools, in particular EIA, to be integrated with the planning system has been seen. As a result, integrated approaches to land-use planning and environmental management tools have been recognized and introduced in some countries, such as Britain and some Australian States. This particular theme is explored in later chapters.

CHAPTER 3 INTERNATIONAL PERSPECTIVES: THE UNITED STATES AND BRITAIN

3.1 Introduction

Land-use planning approaches vary around the world. This chapter focuses on the United States and Britain. Essentially, land-use planning is designed to accommodate socio-economic functions, together with management of some environmental objectives through the use of regulatory powers and planning systems.

In the United States, land-use issues are dominated by zoning and subdivision ordinances which were adopted during the early twentieth century. Land-use planning is almost entirely the responsibility of Local Government. However, the concept of total power delegation to Local Governments has changed since the early 1970s on grounds that these bodies are unable to handle these issues. Land use has had a significant effect on intricate and fragile natural systems that transcend local political boundaries.

Intervention by State Governments in the United States has become more acceptable since the 1970s. Forms of interference vary from State to State. For example, in Oregon, State-wide land-use planning was introduced, and it required all Local Governments to prepare comprehensive land-use plans. These in turn have to comply with the State's planning guidance and goals which cover such issues as economic development and environmental protection (Rohse 1987).

The British planning system has evolved continuously since the first *Town and Country Planning Act* in 1947. This was revitalized in 1971 and 1990. British land-use policy has been based on the regulation of the use and development of land, essentially in a cooperative administrative relationship between the Central and Local Governments. Approaches based on procedural planning systems are seen in the preparation of development plans, in the evaluation of proposals, and in the review of policy (Healey 1983). Land-use planning in Britain is considered to be an important contributor to the control of pollution arising from development activities.

After the issuing of a directive from the European Community to its members to undertake EIAs by 1998, EIA in the British planning system was linked with planning. It is against this kind of background that this thesis now commences to explore the theme of the potential for an integrated approach to land-use planning and environmental protection.

3.2 Land-use planning in the United States

In the United States, responsibility for land-use matters is usually given to States under the constitutional division of power. Under the Constitution powers not specifically given to the Federal Government are retained by States (United Nations 1973). Accordingly, in the case of land-use matters, control has generally been retained by the State Governments and in turn the States delegate these powers to Local Governments, either through their State Constitutions or separate legislation (Fowler 1982). Both the Federal and State constitutions include provisions which are binding on municipalities. One important provision of the Federal Constitution is the protection of property rights, enshrining these principles: "nor shall private property be taken for public use without just compensation" and "no person shall be deprived of life, liberty, or property without due process of law" (from Cullingworth 1993: 16).

The fifty States have different systems of Local Government. The degree of control over Local Government varies from State to State. In 1987 there were more than 80,000 Local Government units across the nation (see Table 3.1). There is traditionally little State involvement in the determination of land-use policy and in the implementation of planning control. States delegate their powers to local bodies, along with most land-use planning (Haskell 1971). Land-use control consists almost totally of local zoning by the division of Local Government areas into districts which are subject to a variety of regulations relating to the use of land and the height and bulk of buildings (Popper 1988; Cullingworth 1993).

In land-use conflict Local Governments are also directed or restricted in their action by individual rights guaranteed by either the U.S. Constitution or a State Constitution. Whenever there is conflict over individual rights or even the extent of government powers, the final arbiter is the court system. Consequently, local authorities are limited by what the courts will permit or what local authorities consider they might allow when the matters are subjected to legal test (Levy 1988).

Table 3.1: American State and Local Government units in 1987

Types of government	Numbers
State Governments	50
County	3,042
Municipal	19,200
Township	16,691
School district	14,721
Special district	29,532
Total of all Local Government units	83,186

Source: Cullingworth, J.B., 1993; *The Political Culture of Planning: American Land Use Planning in Comparative Perspective*; Routledge, New York.

Unlike the British system, American land-use planning is based on zoning, not planning. On this point, Banfield (in Cullingworth 1993:11) stated that "American cities seldom make and never carry out comprehensive plans. Plan making is with us an idle exercise: for we neither agree upon the context of a 'public interest' that ought to override private ones nor permit the centralization of authorization of authority needed to carry a plan into effect if one were made".

All States have passed legislation enabling local authorities to administer zoning controls which are mostly based on the *Standard State Zoning Enabling Act* which was issued in the mid 1920s and 1930s (Cullingworth 1993). Zoning is therefore the action arm of Local Governments and the nation's most prevalent mechanism for land-use control (Ratcliffe 1974; Popper 1988).

Since 1970, however, Federal and State Government intervention in land-use issues has increased. Local zoning is now seen as particularly fallible and has been criticized as economically restricting (Popper 1988; Haskell 1971). In terms of the environment, local land-use planning and control have led to urban sprawl, and the destruction of open space, shore-lines, and wetlands. Moreover, local authorities have allowed industrial and other wastes to affect fragile parts of the environment and residential areas, where exposure to pollution and environmental risks has escalated (Haskell 1971).

There is more concern with development of all kinds such as commercial, residential and industrial projects which have become bigger and more polluting (Popper 1988). Growth-related problems have created overlapping and potentially conflicting State and Local constituencies. Mismatches of development proposals have appeared where previously there was solely local regulation of development having local benefits but primarily regional costs, or when such development activities had regional benefit but primary local cost (Bollens 1992). However land-use decisions resulted in more and more people receiving some negative effects. As Reilly (1975:100) noted about citizens' responses, "There is something wrong with the way we are using our land and guiding urban growth. And they are increasingly saying to officials responsible for urban development, 'stop', 'enough', or at least, stop till we plan, really plan".

These growth externalities contribute a major cost to the Federal Government (Bollens 1992). Such factors have indicated that the performance of local bodies has been inadequate or ill-equipped to cope with local issues, which have become more complex. Land-use determinations of one locality often have significant environmental consequences for residents in other areas. The States' involvement in these issues was considered to be appropriate, and States' land-use planning and regulation were assumed capable of handling the scale and complexity of land-use matters (Bosselman and Callies 1975).

Land-use matters have become more centralized since 1970, and thirteen State Governments have independently set up comprehensive growth programs. All programs insert State prerogation into local growth management through either direct preemptive regulatory control, or the promulgation of States' standards which appertain to local planning (Bollens 1992). The State programs introduced various approaches on the basis that Local Governments could not effectively handle the social and environmental concerns of a regional or State-wide character. Major private and public development was seen as needing direction from a broader growth strategy, and State Governments would serve as coordinators and mediators (Davis 1979). In brief, there were three main reasons for the intervention of States in land-use management and control, summed up by Callies and Freilich in 1986 (in Cullingworth 1993) as follows.

(i) Local authorities were unwilling to make decisions of supra-local impact except on narrow, parochial grounds.

(ii) There was a crisis of sorts regarding existing large developments or resources threatened by pending or proposed land development.

(iii) There was the threatened imposition of Federal land-use control.

In addition, Godschalk emphasised that the need for management of growth "is a response to large-scale national demographic and settlement pattern shifts, which have put pressures for new types of development on those local areas that, for the most part, are least equipped to deal with them" (Cullingworth 1993: 127). Even though there are some forms of State intervention in local land-use matters, there are still some State environmental concerns in broad areas such as growth and development policies, resource management conflicts, and the economic impacts of environmental controls (David 1979).

The introduction of States' land-use and growth management schemes has been dubbed the 'quiet revolution', an intervention movement for higher-level regulation in land-use (Goldber and Chinloy 1984). By 1975 at least, 20 new land-use laws or environment-related laws have been enacted with a view to controlling the operation of large development projects such as power plants or projects in such environmentally sensitive places as wetlands and the coast. Some States have introduced comprehensive land-use planning to guide Local Governments in making plans (see Table 3.2) (Popper 1988).

Comprehensive aspects of planning are notable in Oregon, where local authorities must prepare a comprehensive land-use plan in accordance with nineteen established state-wide goals and a set of State planning guidelines. These were established under the *Land Conservation and Development Act* 1973 (Kivell 1993; Cullingworth 1993). The goals include developing citizen involvement in the planning process, and establishing a land-use planning process and policy framework as a basis for all decisions concerned with the use of land. Furthermore, some objectives require local officials to provide certain types of development such as recreational facilities, transportation, and public facilities and services (Rohse 1987).

In Oregon, the Land Conservation and Development Commission was established to "prescribe planning goals and objectives to be applied by state agencies, cities, counties, and special districts throughout the state" (Rohse 1987: 3). Local bodies in this State have to prepare and adopt a comprehensive plan which is consistent with the State-wide planning goals and guidelines approved

by the Commission. The Commission is delegated the authority to review and approve or disapprove the local comprehensive plan based on its conformance with State guidelines (Jackson 1981). Once the local plan and land-use regulation are permitted by the Commission, the State's role in local planning is considerably decreased, and the main responsibilities are in the hands of local authorities (Cullingworth 1993).

Table 3.2: Some American States' legislation related to land-use and other environmental matters

States	Legislation
California	*Coastal Zone Conservation Act* 1972
Florida	*Local Government Comprehensive Planning and Land Development Regulation Act* 1985
	State Comprehensive Plan 1985
Georgia	*Coordinated Planning Legislation* 1989
Hawaii	*Hawaii State Plan* 1978
New Jersey	*State Planning Act* 1985
Oregon	*Land Conservation and Development Act* 1973
Rhode Island	*Comprehensive Planning and Land-Use Regulation Act* 1988
Vermont	*Growth Management Act* (Act 200) 1988
	Environmental Control Act (Act 250) 1977

Source: Adapted from Bollens, S.A., 1992; State Growth Management: Intergovernmental Frameworks and Policy Objectives, *Journal of the American Planning Association*, **58**, 454-465.

Georgia, California, and New Jersey have also enacted State-wide land-use controls which vary from State to State. Generally speaking, these States have adopted legislation to establish broad planning guidelines for Local Governments in the exercise of their land-use powers (Hurley 1991). The *Planning and Land Use Regulation Act* 1988 of Rhode Island requires consistency between all Local Government comprehensive plans and the State's comprehensive plan (Cullingworth 1993).

To sum up, American Local Governments have the potential for strong influence on land-use issues, as States have been conferred this power through the State and Federal Constitution. Land-use matters have been consistently managed in the form of zoning which was introduced during the early 1920s. With the different administrative structures in the country, the way in which Local Governments handle land-use varies from State to State.

There have been some perceptions of local bodies undertaking land-use decisions inefficiently, including resultant environmental problems related to growth issues that transcended municipal political boundaries. The States' intervention in local land-use has increased in various forms, ranging from establishing new planning legislation to imposing on local bodies compliance with guidelines, including controlling the performance of environmentally sensitive development projects such as building power plants.

3.3 British land-use planning

3.3.1 Framework of land-use planning

In Britain, land-use planning has been steadily developed since the first *Town and Country Planning Act* was introduced in 1947, and was consolidated in 1971 and 1990 (Davies 1993; Miller 1990). The British planning system rests on a capacity to perform as a system for social, economic, and environmental improvement, associated with the extensive structure and strong professional traditions which it possesses at the central and local levels. There is a strong legal and administrative framework of land-use planning, which also provides to some extent powers for pollution control (Fowler 1982; Wood 1986).

British planning has two characteristics which have resulted from the reformation of planning since the 1940s. The first is characterized by the role, function and legal status of the plan-making process and their connection with the control of development. The second is the existence of a strong planning profession concentrated on the idea of planning as a discrete activity encompassing a wide range of methods for controlling the use and development of land (Davies 1993).

The British planning approach has influenced the framework of the planning system in the USA, in the forms of plan development, zoning regulations, and appeal procedures (Fowler 1982). Unlike the American system, land-use

planning in Britain operates within and is subject to effective administrative control by higher tiers of government. It is also unique with regard to the framework of statutory planning in land-use matters which is applied across the country and to almost all kinds of development (Cullingworth 1993).

At the local level, local authorities are extensively delegated to perform the functions of investigation, policy formulation, and implementation of planning controls. Central government, on the other hand, through the Department of Environment, has a role in overseeing the operation of planning and pollution control, and in establishing objectives and scopes of land-use related policy and planning which are passed down to Local Government (Fowler 1982).

Since it was consolidated in 1990, the land-use planning approach has been based on the combination between a Development Plan and Development Control. The first is a formal statement which addresses the principle which will guide local planning authorities in their decisions on detailed applications for the development and patterns of land-use. The latter is established to ensure that proposed planning permission conforms to the forward planning framework (Selman 1992; Hambleton 1986).

The development plan encompasses both a Structure Plan and a Local Plan which are the two-tiers of the Local Government planning system. Counties produce the overall policy guidance document, the Structure Plan, and the Districts produce the more detailed Local Plan (Greed 1993). The Structure Plan was previously approved by the Secretary of the Department of Environment, who would often adjust it so as to reflect national policies. During early 1992, however, regulations were changed to allow local approval. The central agency has a responsibility to oversee and to intervene if necessary to pull policies back into line with national priorities. The Structure Plan is a written statement which states social, economic and physical characteristics, and establishes strategic policies, and is intended to reconcile national policy with local preferences (Grant 1992; Darin-Drabkin 1977).

In respect of the planning law in relation to environmental considerations, a provision of the Act requires local planning authorities when they prepare a structure plan to formulate policy and general proposals with regard to the development and other uses of land in the area, including measures for the improvement of the physical environment and the management of traffic. This

measure, however, is guided by Central Government in relation to the local Structure Plan (Wood 1979).

The term 'physical environment' "should be interpreted as including not only policies to protect an environment regarded as being of a high quality and policies for improving a poor environment (e.g. derelict land reclamation schemes), but also land use policies designed to minimise non-visual intrusions such as noise, smell and dirt. Any authority should show in the reasoned justification:

(i) how environmental consideration has been taken in account in the formulation of their policies; and

(ii) the relationships of the policy and general proposals to other measures for reducing water and air pollution and noise " (Wood 1979: 292).

The Local Plans again are not subject to permission by Central Government, and are usually prepared and approved by the local councils, and they fill in the gaps left by the open-ended Structure Plan. A Local Plan will specify the precise location for housing and industry, and will cover specific policies on such issues as urban conservation and countryside protection (Grant 1992). The general objectives of enumerated Local Plans are as follows:

(i) to develop the policies and general proposals of the Structure Plan and to relate them to precise areas of land;

(ii) to provide a detailed basis for development control;

(iii) to provide a detailed basis for coordinating the development and other use of land; and

(iv) to bring local and detailed planning issues before the public (Hambleton 1986: 100).

Healey (in Hambleton 1986) further commented on Local Plans as a vital instrument for local authorities to achieve their function since they

(i) provide a framework for negotiating between the local planners and the developer;

(ii) give position statements on land use policy for the internal guidance of local authorities; and

(iii) provide information on local authorities policies to all those concerned with land-use matters and development control.

3.3.2 Land-use control

Land-use planning systems provide the mediation machinery through which the government can define the situation under which patterns of land development are allowed to occur. In Britain, Town and Country Planning is considered a preventive process providing a wide range of controls over land development, with which over 400 Local Governments are armed. These controls cover operational developments ranging from building and mining through to changes in the use of land, for example, from housing to commercial (Grant 1992). In addition, the scope for control over new development is wide-reaching and is considered to be one of the distinctive, key elements of the British planning system (Grant 1992).

It is important to mention that British development plans are intended to integrate decision-making about land-use distribution with economic, social, and environmental considerations, together with providing a means of co-ordinating and regulating the flow of development activities (Healey and Shaw 1993; Cullingworth 1993; Wood 1986). Development control is assumed to take place within the context of approved development plans. This basic framework of land-use planning is put together in the context of the goals of the British planning system, which aim to:

(i) meet the needs of new development;

(ii) protect and enhance environmental quality and living conditions;

(iii) secure economic revitalization (at national and local levels);

(iv) conserve natural resources; and

(v) balance the needs of development, social and economic change, and conservation (Pearce 1992).

Local authorities have considerable power to make decisions on proposed developments, with outcomes of unconditional permission, permission subject to conditions, and refusal. From this point of view, the British planning system is considered to play a major role in controlling the spatial origins of environmental pollution, the levels of pollutants, and their distribution from new development projects (Wood 1986). Furthermore, regardless of other material considerations for granting or refusing proposed development, aesthetic values are clearly of material consideration for local planners, and countryside protection for its own sake is a legitimate reason for refusing planning consent (Grant 1992).

Town planning in many Western nations is based on British practice. However, there are some different approaches from those in Britain. The instrument of control over land and development in Denmark and the Netherlands, for instance, is building permission. In addition, development regulation is an administrative and not a legal act. Decisions are taken by local politicians advised by local planning authorities based on the development plan (Healey and Williams 1993). There is, nonetheless, a similar approach to development control provision, that is, in the power of local authorities to give planning permission. Table 3.3 shows some governmental mechanisms for controlling development in which developers are subject to a variety of planning procedures in some European countries.

Planning systems in Britain are supplemented by a number of guidelines from central agencies. These so-called 'circulars' give instructions about planning policy to be adopted by local planning authorities. They guide local councils to consider water, noise, air and land pollution when preparing both the plan-making stages and the development control stages of planning process, and to consult related authorities for pollution control considerations. For example, when undertaking development control procedures for pollution, "authorities are encouraged to continue any consultations under existing local arrangements with the British Waterways Board or the appropriate water undertaker where their interest might be affected" (Wood 1976: 24).

In the case of air pollution, the Circulars give the advice that local authorities should consider the implications in relation to proposals to construct factories,

and proposals for residential or other environmentally sensitive developments in the proximity of existing industrial buildings. In addition, the Circulars also advise that medical or environmental health officers be consulted in deciding applications (Wood 1976).

Table 3.3: European development control plans

	England	Denmark	Netherlands
Name of plan	Local plan	Lokalplan	Bestemmingplan
Function	Guideline for development and land use co-ordination	Implementation of structure plans and development control	Statement of planned development and control
Types	Base maps with proposals for specific development and restriction Written Statement	Detailed land-use plan and regulations	Land-use map and detailed regulations
Basic instrument	Planning permission	Building permit	Building permit
Decision by	District council planning committee	Technical and environmental committee	Municipal Executive

Source: Kivell, P., 1993; *Land and The City: Patterns and Processes of Urban Change*; Routledge, London.

Accordingly, development control procedures include some form of coordination between local planning and related authorities. Whenever a development application is received, pollution control authorities, for example, could then recommend that the proposed development be permitted or refused

on grounds that pollution will occur, or that conditions be attached. In the framework of the approved Structure Plan of South Hampshire in Britain related to the restriction of pollution, there is some imposition on development projects. These will be refused in areas where sewage disposal or sewerage systems are such that an increasing burden would result in polluting water courses (Miller and Wood 1983). The policy on these points clearly states as follows:

> No development will be permitted which would overload existing or proposed facilities such as to cause harmful pollution. . . no industrial or other uses will be permitted unless local planning authorities are first satisfied that effective steps will be taken to avoid the discharge of harmful waste or effluent (Miller and Wood 1983: 102).

In the allocation of land for waste disposal in Britain, planning authorities also have the statutory power to grant or refuse approval of solid waste sites. The policies on solid waste disposal were established in written statements of local structure plans. For instance, in Greater Manchester's approved Structure Plan, it is stated that "when considering approval for new sites for waste disposal or waste treatment plants, the local planning authority will have regard to:

(i) the need for tipping space or waste treatment plants;

(ii) visual amenity;

(iii) the effects (traffic, noise, litter and vermin) on residential areas;

(iv) public health and safety (geology, proximity to water catchment areas, land forms, proximity to the airport, air pollution);

(v) resource conservation (agricultural land, sites of biological interest, recreation potential, future uses of the sites);

(vi) other County Councils' policies; and

(vii) other relevant matters". (Miller and Wood 1983: 146)

In summary, land-use planning imposes a broad set of controls over land development in Britain. As Wood (1986) said, land-use planning is a major

contributor to pollution control where relationships between central and local agencies are coherent. Statutory powers conferred on Local Governments in terms of granting or refusal of proposed development are therefore important instruments of pollution control.

The national policy guidelines or circulars make a significant contribution to the local planning framework for undertaking land-based development and associated problems that might have occurred. Pollution might be a preventive material consideration for refusing planning permission, provided that the situation is proved to be environmentally unacceptable (Wood 1979). In this respect, a requirement for local planning authorities to cooperate with other officials and expert bodies is needed to strengthen the function of land-use control performance in terms of mitigating new potential sources of pollution.

3.3.3 EIA: the European Community and Britain

3.3.3.1 Preamble

In July, 1988, the European Community (EC) introduced Directive 85/337 on the Assessment of the Environmental Effect of Certain Public and Private Projects. It is an example of the Community's aim to integrate land-use planning legislation with national physical planning systems. Member States have to adopt and implement the Directive (Roberts 1991; Williams 1988).

3.3.3.2 EIA policy in the EC

In the EC, environmental problems have become an important issue. The EC collectively decided that economic expansion should not be an end in itself, and that environmental issues also require proper attention. In the environmental field, there are three main established objectives of the Community. These are preserving, protecting, and improving the quality of the environment, contributing to the protection of human health, and ensuring a provident and rational utilization of natural resources (Roberts 1991).

The EC has progressively developed the field of environmental management, particularly in the EIA domain. Eventually, the Directive on EIA came into effect and became a binding policy on members after ten years of discussion and research, although the Directive was approved in June 1985 (Roberts 1991).

The Directive provides a common basis for detailed environmental assessment and control of potentially polluting developments. Assessment has to be undertaken prior to approving any major development which might have effects on the environment (Williams 1983: Roberts 1991). In addition, EIA under the EC Directive has become an important step forward in implementing its environmental policy (Williams 1986).

3.3.3.3 EIA in the British planning system

The EC Directive also has important implications for the British planning system. For instance, the majority of its provisions (more detail in Chapter 4) would be implemented within the existing town and county planning system, with the 'competent authority' being the local authorities (Wood 1988). In addition, the British Department of Environment considered that the EIA process would improve the quality of decision making and assist developers to account for the environmental consequences of given development projects (McDonic 1988).

Britain previously disagreed with adopting EIA to supplement the established range of planning approval procedures, on the basis that existing development controls were already an effective instrument for appraising impacts on the environment (Fowler 1982; Healey and Shaw 1993). Eventually, however, a statutory EIA was established. The Department of Environment is given the responsibility for the implementation of the Directive, and has agreed to introduce the EIA within the framework of existing Town and County Planning. Consequently, developers have to prepare an EIA on their proposed projects. Prior to 1988, there was no formal requirement (Miller 1990; Roberts 1991).

To implement the EC Directive, the *Town and County Planning (Assessment of Environmental Effects) Regulation* 1988 was enacted. It embraced about two-thirds of the relevant projects which require the environmental appraisal design by the Directive (Therivel *et al* 1993). A provision of the Act requires that "the environmental Statement 'may' include an 'outline' discussion of 'the main alternatives (if any), studies by the applicant, appellant or authority and an indication of the main reasons for choosing the development proposed, taking into account the environmental effect' (Miller 1990: 237). The local planning officials who are responsible for development control are obliged to give an

account of any environmental assessment before reaching their decision on a proposed development (Miller 1990).

In summary, EIA was introduced to implement the EC Directive. Notably, local authorities play a vital role as the competent authority in administering or considering the EIA procedure. EIA is considered to be a basic tool for minimizing the environmental impacts of both private and public development projects.

3.4 Conclusion

In the United States, with fifty different systems of State Government, the way that States exercise or delegate land-use related powers to Local Governments is various. Generally, Local Governments in the United States and Britain still have major roles. The British planning system, however, is a hierachical structure, with legal and administrative frameworks for land-use planning. Local Governments in Britain are accountable to a central body which has the task of overseeing the performance of local bodies with respect to national land use policies.

In the United States in recent decades, environmental problems related to the allocation of land have emerged as national issues and have transcended the boundaries of Local Government. Land-use related impacts have created some forms of conflict which go beyond the responsibilities of local bodies to handle alone. As a result, land-use matters are no longer considered only local issues. Land-use related planning and regulation from the higher tier of government are required to deal with environmental concerns.

In some cases, State government intervention in the allocation of land has been needed, and consequently, new land-use related laws have been introduced to restrict to some extent the functional roles of Local Government in these matters. For example, comprehensive planning was established in Rhode Island to regulate local government in exercising land-use functions. Local Government in Oregon still has a significant role in administering land-use matters.

In Britain, land-use planning is integrated with economic and social development, as well as environmental considerations. In terms of land-use controls, the planning system is based on the regulation of the use and

development of land. Land-use planning is an important tool to control the polluting potential of a given development. In particular, in respect of planning permission, environmental considerations are a major factor in refusing a proposed development which is likely to have a significant impact on environmental quality. The most potent power of planning authorities is the granting or refusing of planning permission.

More importantly, the British planning system is strengthened by upgrading the planning legislation or introducing new land-use and environmental related legislation to implement the EC Directive on EIA. This requires all EC members to consider the environmental consequences of proposed developments for both public and private projects. The Directive implies that pollution control is integrated more closely within the context of the planning system, and that environmental issues are given more weight in considering a proposed development.

Thus, the United States and Britain offer contrasting examples of the extent to which planning and environmental management are considered together. Local land-use planning in the United States has not been well-integrated with environmental planning and pollution control. Still, there have been attempts to bring these closer together. For example, by the early 1980s Oregon had introduced a form of assessment into its comprehensive land-use planning, and California was beginning Master Environment Assessments (Hollick 1986). The employment of EIA in particular as a means of strengthening land-use decision-making processes is discussed further in later chapters.

CHAPTER 4 ENVIRONMENTAL IMPACT ASSESSMENT

4.1 Introduction

Processes of environmental impact analysis have been developed to avoid or minimize environmental problems. EIA has emerged as one of the more vigorous tools for the prevention of environmental pollution and deterioration, using a wide range of systematic project appraisal measures.

EIA initially emerged in the United States through the enactment of the *National Environmental Policy Act* 1969 (commonly refered to as NEPA), and the concept was later accepted in many other countries (Clark 1984). Effective land-use planning and development control is enhanced if a requirement for EIA is incorporated into this planning sphere. However, planning systems and EIA approaches are practised differently. It has become increasingly accepted that if EIA is integrated with planning processes, environmental interests could be given more weight, and planning systems might be strengthened with regard to environmental protection.

4.2 Origin and frameworks of EIA

EIA was developed and designed to cope with environmental problems in the United States. This was a landmark piece of environmental legislation in the post World War II period, and gave significance to environmental issues (Clark 1984; Gladstone and Witherspoon 1975; Canter 1984).

EIA was introduced in response to the growing environmental repercussions of resource developments such as large dams and nuclear power plants, the upsurge of the environmental movement, and the inadequacy of project appraisal techniques which were usually based on technical and economic feasibility without sufficient examination of environmental impacts (Clark 1984). Furthermore, a concern which led to the enactment of NEPA was the pursuit of separate missions by federal agencies with little coordination amongst them. This absence of cooperation contributed to impacts on the natural environment. The following statement reflects this concern:

> There are conflicts when environment quality is managed by different policies, originating in conservation, agriculture, esthetics, recreation, economic development, human health,

> and so on ... the operational engineering programs which may affect the quality of the environment are not coordinated through a single group, but are handled through individual inter-agency liaisons (if they are coordinated at all) (Andrews 1975: 151).

EIA can be defined as "the process of predicting and evaluating an action's impacts on the environment, the conclusions to be used as a tool in decision-making" (Therivel *et al.* 1992: 1). Bates (1992: 93) defines EIA as "a means of ensuring that environmental considerations receive equal weight in the decision-making process along with other traditional factors such as the social and economic advantages of a development". In addition, EIA is interpreted as "an activity designed to identify and predict the impact on the biogeophysical environment and on man's health and well-being of legislative proposals, policies, programs, projects and operational procedures, and to interpret and communicate information about the impacts" (Munn in Clark 1983: 4-5).

A report in which an environmental impact assessment is illustrated is usually known as an environmental impact statement (EIS) (Bates 1992). An EIS usually contains a technical assessment of a project with three basic components: a description of the proposed action and the area or activities affected, a discussion of adverse and beneficial environmental impacts, and an analysis of available alternatives and their environmental impact (Bates 1992; Gladstone and Witherspoon 1975). With regard to alternative appraisal, an EIS is designed to help choose a project design which emphasises benefits and minimizes harmful environmental effects (Clark 1983).

Basically, EIA is a formal set of procedures for ensuring that environmental components are reviewed at all levels in plan making. EIA procedures, in the view of Therivel *et al.* (1992: 1), involve "reviewing the existing state of the environment and the characteristics of the proposed action (and possibly alternative actions); protecting the state of the future environment with and without the action (the difference between the two is the action's impact); considering methods for reducing or eliminating any negative impacts; preparing an environmental impact statement (EIS) that discusses these points; and, after a decision is made about whether the action should proceed, possibly monitoring the actual impacts of the action".

EIA has been considered as both science and art reflecting concern both with the technical aspects of evaluation and the effects upon decision-making

processes, and can be characterized as multidisciplinary and predictive (Wathern 1988). Most academics, however, consider EIA to be a mechanism to help planning decision-making rather than an environmental protection measure *per se.* Bidwill (in Clark and Herington 1988: 3) gives some explanation of this point stating that "Environmental Impact Assessment is not an environmental protection measure... the requirement for an EIA suggests that some thought is being given to environmental consequences... and feeds awareness of the need for balanced development and sustainable development".

In addition, Robert and Roberts state that "there is common agreement that the fundamental aim of EIA is not to determine the balance placed by the decision-maker on environment compared to economic, social or other considerations but to ensure that the decision is made on the basis of informed knowledge of the environmental consequences of that decision" (in Clark and Herington 1988: 3).

In the United States, the *National Environmental Policy Act* 1969 requires that a detailed statement of environmental impact be prepared by responsible federal agencies before the implementation of every major federal action likely to have a significant impact on the environment (Andrews 1975). After the introduction of EIA, about 4,000 federal EISs had been prepared by early 1973 (Twiss 1975). Twenty-seven ot the States and Puerto Rico have responded to environmental policy by enacting environmental policy Acts which require the consideration of the environmental impacts of proposed projects. Basically, impact analysis procedures are similar to that required under the provisions of the Federal environmental policy (Baldwin 1985).

Briefly, the EIA concept has appeared as an institutional response by government. It is an analysis-oriented approach in anticipating and minimizing environmental consequences of proposed projects, and includes measures to provide information to decision-makers about all kinds of interests, including environmental considerations.

4.3 EIA approach in other countries

EIA has made substantial contributions in other countries. For example, Canada adopted EIA procedure in 1973, Australia (1974), the Netherlands (1981), and Japan (1984). EIA was required throughout the EC in 1988 (Moltke 1984; Wathern 1988).

In 1985, the EC released Directive 85/337, known as the Environmental Impact Assessment (EIA) Directive. All EC members were required to undertake environmental assessment for specified projects, but the form and method of implementation were left to member states (Wood 1988).

The Directive represented a major step foward in implementing one of the Community environmental policies, that is, that prevention is better than cure (Williams 1986). It is a concept that ensures that environmental consequences of a proposed development's activities are appraised at the time when authorization for development is required. It is the responsibility of developers to submit adequate details of any proposals which might have a significant impact on the environment. This includes the ability of any remedial measures to be assessed before development approval. The authority responsible for granting project consent is required to assess the possible environmental consequences of a project, and can impose any necessary conditions to ensure that any likely damage from the project is mitigated (Williams 1988).

The Directive imposes EIA on two categories of projects named Annex I and II. Annex I Projects require a full EIA, unconditionally. Such projects include crude oil refineries; thermal power stations; disposal of radiactive waste, integrated steel works; asbestos extraction, processing and transformation; integrated chemical installations; motorways, express roads, railways and airports; ports and inland waterways; and waste disposal facilities for toxic and dangerous waste (Therivel *et al.* 1992).

Annex II Projects include agriculture, extractive industries, energy industries, processing of metals, manufacture of glass, chemical industries, food industries, textile, rubber industries, infrastructure projects including dams and urban development projects. Annex II projects may require EIA, depending on the competent authority which considers whether activities should be approved or not (Therivel *et al.* 1992).

The Directive is a binding policy, and EC members are themselves responsible for implementation. The significance of this environmental policy is that it was the first endeavour to set up common procedures across EC members to prevent environmental damage. The competent authority has an important role in granting permission for a development project once its likely environmental implications have been appraised (Lambert and Wood 1990), and has a responsibility in investigating the information proposed which consists of:

(i) a description of the proposed project and its alternatives;

(ii) a description of the environmental consequences of the proposed project;

(iii) an assessment of likely environmental effects of projects;

(iv) a description of any environmental alleviating measures that are proposed;

(v) an indication of the likely compliance with existing environmental and land-use plans;

(vi) a justification of the refusal of reasonable alternatives to the proposed project, and a non-technical summary (Wood 1988).

In some European countries EIA is administered differently in its scope and detailed arrangements. Table 4.1 indicates examples of EIA procedures in these countries. EIA in some countries has not been the subject of specific legislation. Since the Directive was introduced, there was ongoing discussion as to how EIA should be conducted in these countries, and how the requirements of EIA procedures might be suitably adopted.

In Great Britain the potential of EIA is seen as an important mechanism to create a better understanding of the problems associated with proposed projects, and project assessment has been demanded within its existing planning system. The British Government conceived the usefulness of the EC Directive and its works as "being closely linked into the British planning system and not to be considered separate and detached from it" (McDonic 1988: 164). In Belgium, since the EIA Directive has been implemented, proposed project

appraisals rely on existing statutes relating to safety, pollution control, and land-use planning (Wathern 1988).

Table 4.1: EIA approach in some EC member countries

Country	EIA arrangement
Denmark	There is no specific legislative provision for EIA, but EIA is part of the pollution certificate system.
The Netherlands	Formal EIA has been required since 1987 for sectoral plans on waste management, drinking water, energy and electricity supply and some land-use plans.
United Kingdom	There are no formal EIA procedures, but environmental assessment was introduced within existing planning procedures, and EIA is implemented through the *Town and Country Planning (Assessment of Environmental Effects) Regulations* 1988.
France	The EIA system demands impact assessment preceding a decision on a project.
Federal Republic of Germany	There are no specific legislative provisions relating to EIA. Some kinds of environmental evaluation, however, are required in relation to the licensing of certain industrial plants, water uses and nuclear power stations, and some infrastructure projects.

Sources: Wood, C., 1988; The Genesis and Implementation of Environmental Impact Assessment in Europe, in Clark, M. and Herington, J. (eds), *The Role of Environmental Impact Assessment in the Planning Process*, 88-102; Mansell, London; Therivel, R. *et al* (eds), 1992; *Strategic Environmental Assessment*; Earthscan, London.

In Australia, EIA was first established at the Federal Government level with the passage of the *Environmental Protection (Impact of Proposals) Act* in 1974. The Act applies to all Commonwealth proposals and projects directly funded by the Commonwealth. The EIA requirement further extends to State Government projects financially supported by the Commonwealth, or private or State projects which need Commonwealth permission (Thomas 1987). At the State level, EIA was introduced in all States, with a number of different approaches (see more details in Table 4.2) (Formby 1987).

Victoria was the first State to establish a formal EIA system with the enactment of the *Environment Effects Act* 1978. This Act provided a legislative basis for administrative procedures and is currently administered at the discretion of the Minister for Planning and Housing (Wood 1993). In New South Wales, EIA procedures are integrated as a part of the environmental planning process by the *Environmental Planning and Assessment Act* 1979 (Porter 1985). Under the Act, an EIS is required for the EIA procedures which a proponent is obliged to follow. EIA in New South Wales is used as a tool to facilitate public comment, and is utilized by a consent authority as basic information for undertaking the consideration of proposals (Bureau of Industry Economics 1990).

Until very recently, EIA in Tasmania was linked to pollution control (under the *Environmental Protection Act* 1973) since it is seen initially as a pollution control measure for developments that might have environmental consequences. The 1973 Act did not specifically refer to EIA, but did embody some principles of environmental assessment (Thomas 1987). EIAs were undertaken by administrative decision rather than statutory direction.

The Tasmanian *Environmental Protection Act* 1973 defined certain classes of industries as 'scheduled premises'. The decision for requiring an EIS or licence for these industries relied on the Director of Environmental Control (Bates 1992; Porter 1985; Bureau of Industry Economics 1990).

Under the Act a non-scheduled premise is a development that is small or unlikely to cause significant environmental impacts, and accordingly any decision on EIS requirements lies with the decision-making authority responsible for development. The Director might make some recommendation to that authority, however (Bates 1992).

Table 4.2: Comparative overview of EIA arrangements in Australia

	Commonwealth	New South Wales	Victoria	Queensland	South Australia	Western Australia	Tasmania	Northern Territory
Relevant legislation	*Environmental Protection (Impact of Proposal)* 1974	*Environmental Planning and Assessment Act*, 1979	*Environment Effects Act* 1978	*State Development & Public Works Organisation Act* 1971 to 1981	*Planning Act*, 1982	*Environmental Protection Act*, 1971-1980	*Environmental Protection Act* 1973	*Environmental Assessment Act* 1982
Triggering mechanism	Notice of Intent (NoI)	Any action requiring the decision of a determining Authority	Preliminary Environment Report (PER)	Any action requiring the decision of a Responsible Authority	Notice of Intent (NoI)	Notice of Intent (NoI)	State of Environmental Factors (SEF)	Preliminary Environmental Report (PER)
Who decides an EIS is needed?	The Minister (however the Department may decide an EIS is not required)	A Determining Authority, Minister, the Director of the Department	The Proponent Any minister	A Responsible Authority	The Minister for Environment	Any Minister on a recommendation of the EPA	Director of Environmental Control for scheduled premises. Decision-making authority for non-scheduled premises	The Minister on the advice of the Director
Scope for public inquiry under legislation?	YES	YES	YES	YES	NO	NO	NO	NO
Is the EIS usually made public & comments sought?	YES	YES	YES	No requirement but Developers are encouraged to do so	YES	YES	Not mandatory	YES
Who prepares the assessment of the EIS?	Department for the Minister	The Determining Authority	Department for the Minister	(1)	Department for the Minister	EPA	Director of Environmental Control	Conservation Commission
Are the public submissions published?	YES	YES	YES	NO	On request	Occasionally in summary form	NO	NO
Is the assessment report published?	NO	YES	YES	Discretionary	YES	Discretionary	Not usually	Discretionary

(1) The process is different in Queensland in that assessment and review occurs simultaneously with the preparation of the EIS. The assessment is carried out by all responsible authorities.

Source: Thomas, I., 1987; *Environmental Impact Assessment; Australian Perspectives and Practice*; Monash University, Melbourne.

In summary, the influence of EIA as an environmental protection measure has been widely recognized and adopted in many countries. Procedures and requirement of EIA systems, however, vary in each country. Some have established and implemented EIA through separate legislative or administrative measures. Others have introduced EIA as an integral part of the statutory planning system, such as in the case of the Britain and the Australian State of New South Wales.

In European countries, the EC environmental policy has been established and applied throughout its member nations. The Directive is recognized as the first piece of super-national development control legislation to prevent environmental damage across the Community. The establishment of the EC Directive fulfils the optimal aim of increasing developers' awareness of environmental consequences and of providing information for the process of environmental assessment (Healey and Williams 1993; Hollick 1986).

4.4 EIA and planning systems

Usually, EIA is considered to be an activity separate from land-use planning. EIA is a reactive component of land-use, as EIA is operated after proposals are formulated (Clark, Bisset and Wathern 1980). EIA could be a supplementary requirement to existing development controls concerning land-use. Because environmental consequences stem from decisions relating to the allocation of land-based resources, EIA can consolidate the procedures for authorization of land-based developments.

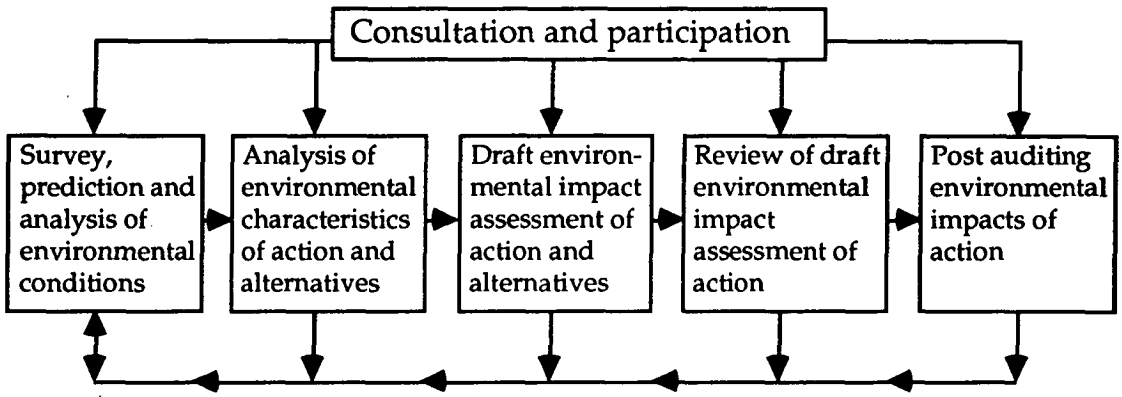
The two approaches have different outcomes relative to environmental issues. Land-use planning operates through the machinery of the planning law framework, using a number of tools such as zoning, whereas environmental protection relies on an EIA before project authorization. In addition, land-use planning and environmental protection are typically practised by people from different backgrounds and with different skills (Lichfield and Marinov 1977).

Both have a common purpose of controlling development projects in the public interest. Planning control measures can be consolidated with EIA to provide an additional source of information. EIA is considered as a basic measure for the sound assessment of development proposals, with a wide range of tools for appraising environmental issues (Clark 1983). EIA is intended not only to ensure that environmental factors are embraced in decision making, but also to

show how environmental considerations are included in the assessment of alternatives and by the provision of information to the public. Figure 4.1 gives some basic steps in the EIA process.

In land-use planning, environmental considerations are usually related to traditional environmental aspects such as the protection of open spaces and the designation of areas for nature protection. Planning systems often reflect inadequate use of environmental criteria in the generation and evaluation of alternatives (Wood 1988).

Figure 4.1: Systems involving the EIA process



Source: Wood, C., 1988; EIA in Plan Making, in Wathern, P. (eds), *Environmental Impact Assessment: Theory and Practice*, 98-114; Routledge, London.

Planning systems *per se* have concentrated on the physical and spatial aspects of use of land and development, without taking adequate account of environmental interests. Fowler (1982) viewed planning systems as not catering sufficiently for environmental consideration at the policy level, and development controls as operating without the benefit of a suitable policy framework on environmental matters. This may result in inadequate base-line information being available for appraising the environmental components of particular proposals. EIA can supplement the information.

An advantage of EIA over normal land-use control derives from the nature of the broad analysis which it directs at proposed projects. The EIA approach involves biological systems and concerns interdisciplinary expertise not commonly found within the planning system when a development application is being considered. The EIA process arguably should have a permanent role within the planning control aspects of a planning system (Fowler 1982).

Furthermore, after a project is subject to EIA, the decision-making process is opened to a wider and more detailed exposure than in normal planning, and public involvement can be expected to increase (Fowler 1983).

EIA can strengthen land-use planning by determining an appropriate land-use in the light of environmental considerations. A number of countries have established EIA as an integral part of land-use planning. In Britain, EIA was introduced to consolidate its planning system. During the first 16 months of operation, 121 environmental statements were undertaken in support of the authorization of land-use for development (Roberts 1991). The policy of the EC is to prevent environmental damage through the medium of land-use planning and development control procedures (Williams 1988).

In Australia, there are examples where EIA has become an environmental protection tool by integration within the land-use planning system. In Victoria, the *Planning and Environment Act* 1987 requires the consideration of significant effects on the environment in land-use planning decisions (Wood 1993). In New South Wales, environmental and planning considerations are combined within one system.

4.5 Conclusion

The EIA approach and its acceptance in some countries imply that it is a useful and confirmed measure in environmental protection. EIA is recognized as an intrinsic element of environmental management along with other approaches that safeguard the environment, such as land-use planning (Fowler 1985). It would be of advantage for protecting the environment if these two approaches converge rather than diverge.

In the land-use planning approach, the failure to consider environmental factors in development activities can be supplemented by an EIA process. A broad range of environmental interests and alternatives to proposed developments can be examined before reaching a final decision. The incorporation of an EIA requirement into a planning system is seen to be appropriate, and advantages the environment when an authorization for the development of land is sought. Some countries have integrated EIA processes within existing statutory planning.

CHAPTER 5 AUSTRALIAN LOCAL GOVERNMENT AND ENVIRONMENTAL MANAGEMENT

5.1 Introduction

Local Governments, as a third tier within the structure of the Australian political system, have played roles that have had important impacts on social, economic, and environmental conditions. Local Governments are in a prominent position to influence the nature of local and regional communities, and the quality of residential life.

Usually, Local Government powers are obtained from the States in the form of Local Government Acts. Local councils use these statutory powers to facilitate or provide community services. Recently, an increasing awareness of local communities in environmental issues, associated with revitalized States' legislation, have begun to make a significant contribution to enhancing the roles and responsibilities of Local Government to tackle a wide range of environmental problems.

5.2 Statutory powers of Local Government

Under the *Commonwealth of Australia Constitution Act* 1901, the Federal Government is empowered with specifically enumerated legislative powers, "and the residue of unspecified powers resides with the States" (Fowler 1984: 11). The States can act on all matters which are not specially retained by the Commonwealth under the Constitution. The Federal Government is not explicitly or expressly empowered to make laws in respect of environmental matters. The States, as a result, have developed their own legislation for the protection and conservation of the environment, and this is accompanied by administrative arrangements (Fowler 1984). The Commonwealth has powers which promote environmental objectives affecting State and Local Governments.

The powers, enumerated in S. 51 of the Constitution, are connected with trade and commerce, external affairs, corporations, finances and taxation, and "people of any race for whom it is deemed necessary to make special laws" (Bates 1992: 64). For example, a section of the *World Heritage Properties Conservation Act* 1983 used this power to protect Aboriginal heritage items

subject to damage from the proposed Gordon-below-Franklin hydro-electric scheme in Tasmania (Bates 1992).

Local Government plays an important role in the States' machinery of government. Issues of the political and legal status of Local Government have been raised, since it is not recognized in the Australian Constitution, nor in the State Constitutions (Department of the Prime Minister and Cabinet 1992; Advisory Council for Inter-government Relations [ACIR] 1985). Victoria and Western Australia led moves in 1979 to amend State Constitutions to recognize Local Government as a third tier of government in the Australian political system (Advisory Council for Inter-government Relation 1985).

South Australia followed a year later in the *Constitution Amendment Act* 1980. Some States still have not acknowledged the status of their Local Governments. A study by the Advisory Council for Inter-government Relations (1985: 16) gives some recommendations to the Commonwealth Government that "State and Territory governments which have not yet legislated to provide constitutional recognition of local government should introduce such legislation as soon as possible".

New South Wales revised its Constitution to accord official acknowledgment to its Local Governments in 1986 (Keen and Mercer 1993). In 1992, there were 914 Local Governments in Australia with statutory powers, structures and responsibilities obtained from States' Acts (Department of the Prime Minister and Cabinet 1992; Hurley 1991).

These Acts specifically prescribe the powers and functions of Local Government, which can not act unless it is expressly empowered to do so. More recently however, in all States, the powers of Local Governments have been set out or are being addressed in broader terms, with a view to removing outdated provisions and streamlining the legislation (Cutts and Osborn 1989).

The *Local Government Act* 1989 of Victoria, for example, prescribes that Local Government's functions are to facilitate the development, improvement, and coordination of community services, and ensure that resources are utilised effectively and efficiently (John Howard and Associates Pty Ltd 1988). In Western Australia, the *Local Government Act* 1960 identifies local councils' accountabilities as providing for good rule and government, and for the

convenience, comfort, and safety of persons in municipal districts (Cutts and Osborn 1989).

With a wide range of powers and responsibilities given by the State, Local Government functions can be broadly characterized into three categories with respect to environmental issues (Purdon and Graham 1992).

Works programs- in relation to water and provision of local infrastructure, particularly sewerage, open space, and community facilities.

Property services- provide for the removal of solid and liquid wastes from individual properties.

Regulation- Local Governments across Australia have the main role in regulating development, particularly through land-use planning, which in turn is related to land and building regulation.

It can be seen that Local Government activities impinge upon social, economic, and environmental matters at the local level. Local Government is in a vital position to influence the nature of communities, and the quality of life of residents.

5.3 Role of Local Government in environmental issues

Local Government has had a long involvement, perhaps unacknowledged, in environmental management issues. The involvement of Local Government in waste management, water quality, and local amenity has been evident over the last 100 years (Graham 1992). Local Government has, *de facto*, conducted local environmental management through its functions of approving land and building development, and providing services and infrastructure.

In recent years, there has been an increasing emphasis on social and broader environmental aspects by many Local Governments, even though the overt concentration still continues to be on the provision of transport facilities (mostly in the form of local road construction), land and property development, waste removal, waste water treatment, and associated facilities. Clearly these are in the realm of environmental quality, but have not always been seen clearly as such. In other environmental matters, there are areas in which Local Government's roles and responsibilities are negligible or highly limited, for

example, with respect to mining and mineral rights, forestry, and national parks (Hall 1990).

The powers of Local Government in dealing with environmental issues vary amongst the States. These depend on how much the State delegates environmental responsibilities to the lower tier of government. Table 5.1 gives a broad indication of the powers and functions of Local Government in environmental management in the six States and the Northern Territory as they were in 1989. It is noted that significant changes have occurred in some of these powers since that time, and that this process of change is continuing through the 1990s with respect to the roles and responsibilities of Local Government and the community in environmental and planning matters. Tasmania is a clear example of this.

Victorian Local Governments have powers related to many aspects of the environment. Local Governments in South Australia, on the other hand, have the most limited powers compared to the other States. The basic aspects of environmental management, such as garbage collection and disposal, zoning, and planning are the responsibility of Local Government in all States.

Local Government is not the only authority involved in delivery of local services. There are still various Commonwealth and State agencies implicated in providing services at the local level. Consequently, Local Government has to perform its functions through a complex of intergovernmental controls and responsibilities. Other key agencies with which Local Government interacts include, for example, public works departments, and agencies for forestry, parks and wildlife, and environmental planning (John Howard and Associates Pty Ltd 1988). There are also 'regional organisations' which often involve local and State parnerships.

The States' functions have been retained in important roles in respect of environmental protection and pollution control. The legislative and administrative powers of Local Government in these areas are obtained directly from the States (Hurley 1991). For example, the first *Clean Air Act* was established in 1957 in Victoria, followed by New South Wales, Queensland, Western Australia, South Australia and Tasmania. Local Government in these States had significant roles in the implementation and enforcement of these Acts, with supervision by the responsible State Department, generally the State Health Department (Hurley 1991).

Table 5.1: 1989 summary of environmental powers and functions of Local Government

Note: p = Power conferred; - = No power conferred

Function	NSW	VIC	QLD	WA	SA	TAS	NT
Environmental protection	p	p	p	-	p	p	p
Parks & Gardens	p	p	p	p	-	p	p
Air Pollution	-	p	-	-	-	p	p
Incinerators	p	p	-	p	-	p	-
Litter	-	p	-	-	-	p	p
Sewerage	-	p	-	-	-	p	-
Water pollution	-	p	-	-	-	-	-
Garbage collection/ disposal	p	p	p	p	p	p	p
Recycling	-	p	-	-	-	p	-
Building regulation	p	p	p	p	p	p	-
Subdivision	p	p	p	p	p	p	-
Zoning/planning	p	p	p	p	p	p	p
Stormwater-drainage	p	p	p	p	p	p	p

Source: Australian Local Government Association and ILC Australia Pty. Ltd., 1989; *The Australian Local Government Handbook;* Australian Government Publishing Service, Canberra.

Since 1970, most States have introduced or established separate authorities to administer clean air legislation, and have adopted standards for pollution emissions independent of State Health Departments. As a result, most regulatory, administrative, and enforcement powers have been focused on the newly specialized State agencies (Hurley 1991). Agencies which were established in the States, for example, include:

(i) the State Pollution Control Commission in New South Wales, established by the *State Pollution Control Commission Act* 1970;

(ii) the Environment Protection Authority (EPA) in Victoria, created by the *Environment Protection Act* 1970 (Vic);

(iii) the Environmental Protection Authority of Western Australia, enacted under the *Environment Protection Act* 1986; and

(iv) the Department of the Environment (now effectively a Division of the Department of Environment and Land Management) in Tasmania, set up under the *Environmental Protection Act* 1973 (Tas) (Bates 1992).

Even though States have established such statutory authorities administering pollution matters, Local Government has important responsibilities in relation to these areas. In New South Wales, local councils are accountable for environmental control, protection, and conservation under the *Environmental Planning and Assessment Act* 1979. In addition, powers are conferred on Local Governments undertaking pollution control under some legislation, for instance, the *Public Health Act* 1902 and the *Clean Air Act* 1961 (Bates 1992).

In Victoria, Local Governments have a wide range of roles in pollution control, such as controls of noise, water, air and visual pollution under the *Local Government Act* 1989 and *Health Act* 1958. In Tasmania, the roles of local councils in pollution control were derived from varied legislation such as the *Local Government Act* 1962 and *Public Health Act* 1962 (Bates 1992). This often stemmed from 'statutory nuisance' provisions of the *Local Government Act* 1962.

In summary, the roles of Local Government in environmental management are different from State to State. The relevant mechanisms of Local Government are derived from State legislation. The extent of local power depends on how much each responsibility State gives to Local Government. Local Government Acts and associated State legislation identify the boundaries of Local Government handling of the local environment. Yet, States' agencies have played prominent roles in environmental matters, for example, setting up new environment-associated legislation. Recently, the perception of Local Government has shifted from traditional, narrowly conceived roles such as waste collection and disposal, to broader consideration of the relationships between development and service activities and environmental quality at local and increasingly regional levels.

5.4 Changed role of Local Government

The relatively recent emergence of a heightened awareness in the community about maintenance of quality of life and environmental protection has been reflected in escalating legislative activity at both State and Federal level. Many environmental problems appear at the local community level and, accordingly, Local Government plays a key role in addressing these problems.

Recognition that many environmental problems have their roots at local levels was given at the United Nations Conference on Environment and Development in Brazil in 1992 (Johnson 1993). Local Government was recognized as a potential mechanism for dealing with the environment effectively. Local Government was seen as playing a key role in educating, mobilizing, and responding to the community to promote sustainable development, and assisting in implementing national and subnational environmental policies (Johnson 1993).

There are a number of reasons Local Government could deal with local environmental problems effectively and efficiently. These include its closeness to local communities and its understanding of local areas and their environment. It can be sensitive to public opinion and can be flexible in its approaches to problems. According to the Australian Local Government Association's 1991 environmental policy, the environmentally significant areas which concern Local Government are as follows:

(i) management of the natural environment;

(ii) the construction, preservation, and improvement of the built environment;

(iii) resource conservation;

(iv) waste minimisation, pollution, and recycling (Graham 1992).

Expansion of the roles of Local Government relating to the environment is still restricted, since Local Government has to operate within the policy and legislation designed by the State Governments. However, recent developments to enhance the roles of local bodies have emerged, including the new Victorian legislation. During 1989, the previous *Local Government Act* (1958) in Victoria

was replaced by a new Act which provides a clear statement of the functions and powers of Local Government. It assigns to local councils greater powers and responsibilities than they have ever had before (Keen and Mercer 1993).

In Tasmania, the *Local Government Act* 1993 similarly confers significantly enhanced powers and responsibilities onto councils and the community within the context of the new 'resource management and planning system', which has been operating since 1 January 1994. In respect to this, the roles of Local Government in land-use planning and environmental assessment are enhanced through the adoption and integration of the new planning system and environmental protection tools, particularly EIA. These changes in Tasmania are discussed in detail in Chapter 8.

Legislative changes are being developed in all States to replace their outdated Local Government Acts. These provide Local Government with broader powers and responsibilities with which to respond more efficiently and effectively to public needs. In Victoria, for example, local residents are given greater opportunities to participate in community development (Australian Local Government Association and ICL Australia Pty. Ltd. 1989).

Recently, new environmental programs have partly been initiated, coordinated and implemented by local councils across Australia. Some programs are relevant to inter-government relations. The Victorian Conservation Strategy is an example. It was developed along the lines of the National Conservation Strategy and focuses on eight conservation programs such as restoration of land, forest protection, resource management, and enhancement of the urban environment. The purpose of the strategic programs was to ensure that all local and regional planning schemes were consistent with the State's strategy (Anon. 1987).

This initiative was claimed to have made Victoria the only State in the world taking such a commendable lead (Keen and Mercer 1993). At the local level, its goal is to involve communities in developing environmental strategies. In addition, Local Governments are helped by the State in investigating and preparing strategies and action plans within the framework of the State Conservation Strategy (Anon. 1987).

One local conservation strategy objective is to develop a greater community understanding of environmental goals, and a focus for community

development. Table 5.2 shows some issues addressed in Local Conservation Strategies. The participation of local people in planning and working together to protect and improve local environmental quality makes a significant contribution to the feeling of belonging to a community and to an increased sense of responsibility for the environment (Fendley, Wescott and Brooks 1992).

Table 5.2: Environmental programs in Local Conservation Strategies in Victoria

Issue	Examples
Land Management	Code of forest practices, minimisation of use of agricultural chemicals, pasture and crop management.
Aquatic management	Wetland management, water quality protection, coastal dune protection, regulation of recreation use, and tree planting.
Flora and fauna	Remnant vegetation protection and restoration, roadside revegetation, and establishment of wildlife corridors.
Heritage/ planning	Maintenance of historical buildings and sites, town protection and enhancement of streetscapes, and planning for residential subdivisions.
Community development	Encouraging special and local interest groups, establish an environmental newsletter, environmental youth award, and community environmental grant schemes.

Source: Keen, M. and Mercer, D., 1993; Environmental Planning at the Local Level: The Example of Local Conservation Strategies in Victoria, Australia, *The Environmentalist*, **13**, 83-95.

Landcare schemes are examples of community based programs, and are undertaken by local Landcare groups. These schemes encompass all aspects of resource conservation, and originate in and are driven by the community (Fendley, Wescott and Brooks 1992).

Thus, enhanced roles for Local Government are being gradually developed. Evidence of successful environmental programs has been apparent involving cooperation between all parties, including State Government, Local Government, and local communities. These may make a significant contribution to achieving good local environmental management.

5.5 Conclusion

Most environmental problems have usually appeared at local levels, and consequently Local Governments play important roles in addressing these problems. Local Governments have performed their functions as regulators and service providers in such areas of environmental management as waste collection for a long time. More recently, however, the responsibilities of Local Governments are being changed from their traditional roles to broader considerations of the relationship between development and environmental quality. Particular issues are no longer to be addressed in isolation.

Importantly, from an the international perspective, a highlight of the 1992 United Nations Conference on Environment and Development (the Earth Summit) has been a focus on grassroot level agencies as a potential mechanism for managing the local environment effectively. In addition, Local Governments are considered to be suitable bodies for implementing national policies, promoting the concept of sustainable development, and maintaining or improving the quality of the local environment.

The roles of Australian Local Governments are being enhanced by taking greater responsibilities for their own environmental performances. At the same time, there is increasing awareness by local communities of the need to protect their local environment. There is now evidence of environmental programs, for example in Victoria, in which State and Local Governments and local communities work together to achieve their goals in terms of both community development and environmental quality.

It is in the area of land-use planning that local government reforms are undergoing the most fundamental change as the concept of sustainability is adopted and the process of integration of State and Local Government land-use planning with other policy areas develops. The discussion will now focus on the roles of these two tiers of government in land-use planning in some Australian States before looking in more detail at the recent Tasmanian reforms.

CHAPTER 6 ROLES OF STATE AND LOCAL GOVERNMENT IN LAND-USE PLANNING IN AUSTRALIA

6.1 Introduction

The nature and availability of land-based resources are a function of natural systems and of land itself, as well as culture. Unwise use of land may lead to ecological instability, or deterioration of land resources with significant impacts on the environment. Concerns about land resources have become not only local and national issues, but also international.

In Australia, with a total land area of 769 million hectares, almost three-quarters is arid and semi-arid land unsuitable for agriculture. About 5 per cent of the total land area is covered by forest, and 10 per cent is used for agricultural activities (Gilpin 1980). There is adequate land to meet most of the nation's essential material requirements. Nonetheless, in areas of high population density, important conflicts are arising with regard to the usage of land for purposes such as urban development, transportation, nature conservation, industry, and recreation (Gilpin 1980). Basically, use of land can be classified into two major divisions, urban and rural (see Table 6.1 for more details).

The intervention of government agencies is needed to deal with conflicts between development and the requirement to protect and improve the environment. An essential mechanism of government in handling land-use matters is land-use planning policy. Generally, planning and control of land-use in Australia is a responsibility of State and Local Government, since power over land-use is not one of the express powers in the Australian Constitution conferred on the Federal Government (The Parliament of the Commonwealth of Australia 1984).

Land-use questions are inextricably connected with the environmental consequences of development. Land-use matters are directly or indirectly related to land-based resource allocation, both in urban and rural areas. In addition, any development, management, or conversion of land-use has socio-economic as well as biophysical impacts.

In recent years, there have been moves towards ideas of integrated land-use planning processes in accordance with social and economic goals. Moreover,

the allocation of land has to account for protection of both the natural and built environment in terms of the environmental impact of development activities. Thus, there is a need to incorporate environmental factors into all aspects of land-use planning and control.

Table 6.1: List of main types of land-use patterns in Australia

1	Urban and residential	12	Education and scientific research
2	Industrial and commercial	13	Conservation of fauna and flora
3	Agricultural	14	Wilderness areas
4	Forestry	15	Transport
5	Mining	16	Ports and harbours
6	Quarrying	17	Public works
7	Water catchment	18	Pastoral
8	Irrigation	19	Other network services
9	Energy facilities		
10	Coastal		
11	Tourism and recreational and other leisure activities		

Source: Gilpin, A., 1980; *Environmental Policy in Australia;* University of Queensland Press, Queensland.

A recent initiative is to integrate land-use planning and management of land resources. This integrated approach has to be linked with social and economic development, and associated with environmental protection as discussed at the Earth Summit in 1992. The approach may make a prominent contribution to the effective and efficient use of land (Johnson 1993).

6.2 Land-use planning and the environment

Environmental problems have regularly appeared in modern society both in urban and rural areas. Government, as the responsible authority, has a task to protect or improve the environment in the common interest. A means to overcome these problems may be in the form of rules or regulations which are designed to remind administration to account for some of the environmental impacts of decisions. Fowler (1984) has categorized four basic components of modern environmental law:

(i) environmental planning and protection legislation;

(ii) resource allocation legislation;

(iii) conservation legislation; and

(iv) development legislation.

Environmental planning and protection legislation are variously subdivided into five categories. These are land-use planning, EIA, pollution, waste disposal, and hazardous substance legislation (Fowler 1984). The environmental aspects of urban and town and country planning, on the other hand, are being increasingly recognized, since the results of land-use planning may involve environmental disturbance (Bates 1992).

Table 6.2 shows the overall number of laws, both directly or indirectly related to environmental matters, in place in Australia in the mid-1980s. Legislation relating to planning and control of land was adopted by most States immediately after World War II, in response to an offer by the Commonwealth Government to provide financial assistance to the States for housing development schemes (Fowler 1984). The legislation was adapted from the British model, and usually emphasises the zoning of land to specify what uses of land will be appropriate or inappropriate, that is, identifying its suitability for particular purposes and interdicting inconsistent uses (Bates 1992; Fowler 1984).

Land-use controls have provided basic methods for the regulation of development activity in Australia and extensive administrations have appeared in most States to deal with them. States develop State land-use policy as a guide for Local Government, as discussed in Chapter 5.

State authorities are charged with the responsibility for setting up land-use policy, and for the implementation of development control powers with respect to significant and controversial proposals which may have adverse effects on the environment. Residual powers, on the other hand, are generally conferred on Local Government for handling detailed local planning and undertaking the more routine types of development application.

For many years, planning authorities in both State and Local Government enjoyed exclusive jurisdiction over development control. The consideration of proposed developments requiring planning consent was exercised according to the criteria of amenity, and orderly and proper planning. One of the most common criticisms is that land-use planning was inadequately integrated with environmental planning and pollution control (Hurley 1991).

Table 6.2: Environmental legislation in Australian States in the mid-1980s

Government	Number of Acts	
	1984	1986
Commonwealth	37	38
New South Wales	36	38
Victoria	57	55
Queensland	34	38
South Australia	49	51
Western Australia	43	43
Tasmania	23	23
Northern Territory	39	38

Source: O'Brien, B.J., 1993; *Nationalising the Australian Environment: The Agreements of '92*; The Institute of Public Affairs, Perth.

A useful general framework for land-use planning is that it is concerned with questions of our existence involving public choices with regard to the extraction, distribution, use, pollution or deterioration of natural resources (Birkeland-Corro 1988). Some States have recently endeavoured to revise their existing land-use planning system so as to integrate environmental issues into land-use planning and control.

Previously, however, the structures of administrative arrangements in the States separated the functions of land-use planning from environmental quality and protection functions (Bates 1992). Some States, such as New South Wales and South Australia, have restructured their administration so that their control bodies, related to land-use planning and environmental quality, are amalgamated into one organization (Bates 1992).

In New South Wales, for example, the *Environmental Planning and Assessment Act* 1979, was the first State legislation combining environmental impact assessment procedures with land use planning controls (Fowler, n.d.). In South Australia and Victoria, legislative and administrative reforms have linked environmental impact assessment procedures with the restructured land use planning system. More recently, Tasmania's planning reform has attempted integration of environmental protection with land-use planning (discussed in Chapter 8)

Thus, endeavours to manage conflicts between development and the quality of the environment in Australia have contributed to the formulation of new approaches in which a wide range of issues are taken into account in environmental, social and economic contexts. These have led to the development of legal and administrative measures, which vary amongst the States.

6.3 Responsibility of States in land-use planning

It has been argued that the New South Wales *Environmental Planning and Assessment Act* 1979 is the most detailed and important piece of law covering land-use control, and the most sophisticated State planning legislation in Australia (Stuckey 1991; Byrnes 1990). The legislation integrates environmental impact assessment with land-use planning and development processes, and introduces an overall planning and land-use strategy, bringing, in particular, broader environmental, social, and economic issues into the planning process (Lipman 1991). The objectives of the *Environmental Planning and Assessment Act* 1979 are summarized as follows :

(i) to encourage the proper management, development and conservation of natural and man-made resources, and cities and towns for the purpose of promoting the social and economic welfare of the community and a better environment;

(ii) to endorse the sharing of the responsibility for environmental planning between the different tiers of government; and

(iii) to provide enhanced opportunity for public involvement and participation in environmental planning and assessment (Fisher 1993).

The environmental planning instruments which comprise NSW environmental planning policies, regional environmental plans, and local environmental plans, are mechanisms to achieve these objectives. In applying the environmental planning instruments, a number of essential issues must be considered, such as protecting and ameliorating impacts on the environment, controlling development, and reserving land for open space (Stuckey 1991).

It is the responsibility of the State's environmental agency to prepare planning policies in a format that is determined by the Minister. Furthermore, the Act prescribes that the Director of the Department may prepare draft regional environmental plans for any region or part of a region after the preparation of environmental studies of the land to be affected (Whitmore 1981).

In Victoria, land-use matters are currently dealt with under the *Planning and Environmental Act* 1987. Under this Act, a planning scheme must seek to further the objectives of planning in Victoria within the area covered by the scheme and may make any provision which is consistent with the use, development, protection or conservation of any land in the area (Eccles and Bryant 1991). The objectives are briefly set out as follows:

(i) to provide for the fair, orderly, economic and sustainable development of land;

(ii) to accommodate the protection of natural and man-made resources and the maintenance of ecological processes and genetic diversity;

(iii) to maintain and enhance those buildings, areas or other places which are of scientific, aesthetic, architectural or historical interest, or otherwise of special cultural values; and

(iv) to protect public utilities and other assets and enable the orderly provision and co-ordination of public utilities and other facilities for the benefit of the community (Fisher 1993).

The planning legislation in Victoria seeks to achieve policy objectives that are, in general terms, similar to those in New South Wales. According to Fisher (1993), the fundamental structure of this kind of planning legislation for achieving environmental objectives relies upon two functions, the formulation

of planning schemes, and a system of permits for the use or development of land.

The *Planning and Environmental Act* 1987 includes a statement of the objectives of planning, as noted above, and a statement of the objectives of the planning framework. These objectives are:

(i) to ensure sound strategic planning and co-ordinated action at State, regional and municipal levels;

(ii) to enable land-use and development planning and policy to be easily integrated with environmental, social, economic, conservation and resource management policies at State, regional and local level; and

(iii) to ensure that the effects on the environment are considered, and provide for explicit consideration of social and economic effects when decisions are made about the use and development of land (Fisher 1993).

Thus, the planning framework advances prominent objectives for an integrated approach to planning, having regard to effects on the environment of decisions about the use and development of land, and taking into account the possible effects of social and economic matters consistent with such use and development.

In Tasmania, there has been a well-developed system of statutory planning focused on Local Government planning schemes with clear processes for public involvement. The planning system at the State level and regional level, on the other hand, has been less well-developed. There was no specific State-wide land-use planning structure, as in New South Wales and Victoria. At the State level, the system aimed more at co-ordinating and, where appropriate, joint review of the activities of separate State, regional, and local government bodies (Tyler 1988).

The statutory organization responsible for environmental control is the Department of Environment and Land Management (formerly Environment and Planning). The stated objectives of the agency are to protect and improve the environment and to ensure a balanced, fair and sustainable use of Tasmanian land resources (Department of Environment and Planning 1992).

According to Bates (1992), the Department largely performed a pollution control function, and was not a broad environmental planning agency. The main function of the *Environmental Protection Act* 1973 was to consider means and initiate steps for the protection of the environment, to undertake investigations into problems of environmental protection, and to promote, encourage, co-ordinate and carry out short-term and long-term planning and projects in environmental protection in conjunction with or separate from other State Departments.

The major components of the land use legislation in Tasmania was the Town and Country Planning and Subdivision Parts of the *Local Government Act* 1962 (Mant 1981). The Commissioner for Town and Country Planning, now replaced by a Land Use Planning Review Panel, was accountable for land-use planning and for the formation of land-use policy at the State level (Office of the Commissioner for Town and Country Planning [not dated]; Department of Environment and Planning 1992).

This statutory authority was a part of the institutional structure for land-use decisions, and its task was to ensure that the use of land and the development of cities and towns was effectively co-ordinated with the interests of the community. Its responsibility was to advise the Government at the technical level, and to advise regional authorities and Local government on planning and development policy. In addition, it advised and helped Local Government on the preparation of planning schemes, and consented to the approval by municipalities of subdivisions (Birkeland-Corro 1988; Office of the Commissioner for Town and Country Planning [not dated]).

As mentioned previously, there was no statutory administrative body in terms of land-use planning structure, nor planning and development control system at the State level. The State has now established a new legislative framework for State resource management and planning. As a result, a new package of legislation has been recently introduced. These laws are intended to be interconnected and complementary, to achieve a framework for integrated resource management and planning (discussed in Chapter 8) (Department of Environment and Land Management 1993).

6.4 Roles of Local Government in land-use planning

6.4.1 The involvement of Local Government in land use

Local Government plays a significant part in land-use planning and development management in Australia. Land-use planning provides control over the location of three broad categories of activities, namely, residential area uses, employment uses, and leisure and recreational uses, usually by separating them. Land-use planning, as traditionally understood in Australia, is based on a premise of the physical arrangement of uses, and interactions between different land-use activities (Department of the Prime Minister and Cabinet 1992).

Local Government has an essential function in respect of land-use matters when it comes to development, which includes a control function and a facilitating function. The first is administered via a process of development application and consent. These activities have tended to require an emphasis on the possible environmental impact of proposed development activities, largely as a result of environmental planning legislation in recent years. Local Government has focused on facilitating development activities by provide infrastructure and services such as roads, water, recreation facilities, and rubbish removal, or by altering its land-use controls (zoning) (Hall 1990). Generally speaking, the role of Local Government in land-use matters may be summarised as follows:

(i) Development control: for example, Local Government approves development, may enforce controls over the density of building and open space provision, and may prohibit the demolition of buildings.

(ii) Subdivision control: Local government supervises engineering standards, for instance, road widths, drainage and allotment size, which in turn may have an impact on the cost of servicing.

(iii) Building regulation: Local Government implements building codes imposed by State regulations (Department of the Prime Minister and Cabinet 1992).

The power and responsibility of Local Government are usually derived from State legislation and subordinate legislation. Environmental planning and assessment law in NSW which requires local councils to make local

environmental plans is an example. Subordinate legislation, in the form of policy framework guidelines or directions, such as State environmental policy, may require specific procedures for administering special issues or areas. In respect of land-use planning control, Local Government has statutory powers in all States (except the Northern Territory) (Hall 1990; Department of the Prime Minister and Cabinet 1992).

Traditionally, Local Government has retained the tasks of formulating local land-use planning and handling the more day-to-day processes of development applications. With the escalating awareness of local environmental issues, environmental planning processes are making a significant contribution to a fresh approach in most States.

New approaches require both State and Local authorities to take environmental effects into account when making decisions with regard to land use or proposed development schemes, including requirements for EIA. However, planning legislation or administrative procedures vary from State to State. Approaches to redefining the responsibilities of Local Government in land-use planning systems in some States are reviewed below.

6.4.1.1 New South Wales

In New South Wales, the *Environmental Planning and Assessment Act* 1979 was introduced to promote and enhance Local Governments' role in local environmental planning, and encourages all levels of statutory planning authorities to take account of the broader environmental issues of land-use planning. In particular, the Act provides increased opportunity for public involvement and participation in environmental planning and assessment (Department of Planning 1989).

Under the Act, Local Government has a prime role to ensure that local environmental plans and development control decisions are related to the sound management of environmental resources. Likewise, local councils are the approval authority for development control. As a step towards a local environmental plan, the legislation requires a council to prepare a draft for the whole or any part of its area.

Two or more councils may decide to combine in the preparation of a draft plan for the whole of their areas or parts of their areas (Stuckey 1991). The draft plan

is made available for public submission, and it is required that Local Government submits the plan to the Department of Environment and Planning for approval. Figure 6.1 shows the local environmental planning process.

In some cases, a local environmental study is required, depending on the decision of the Director of the Department. In general, such a study must cover physical factors, such as pollution, including air, water, land, and noise, and social and economic factors (Department of Planning 1989).

With regard to a development control plan, it is the role of the local authority to consider whether it is necessary or desirable to provide more detailed provisions than the local environmental plan, for a part or parts of land to which the plan applies (Stuckey 1991). Environmental planning control is another important function of Local Governments. The legislation confers powers on local councils for the approval of subdivisions and other land use activities, and provides for the making of development applications (Stuckey 1991). The definition of development under the legislation, in relation to land, is as follows:

(i) the carrying out of a work in, on, over or under the land;

(ii) the use of that land or of a building or work on that land; and

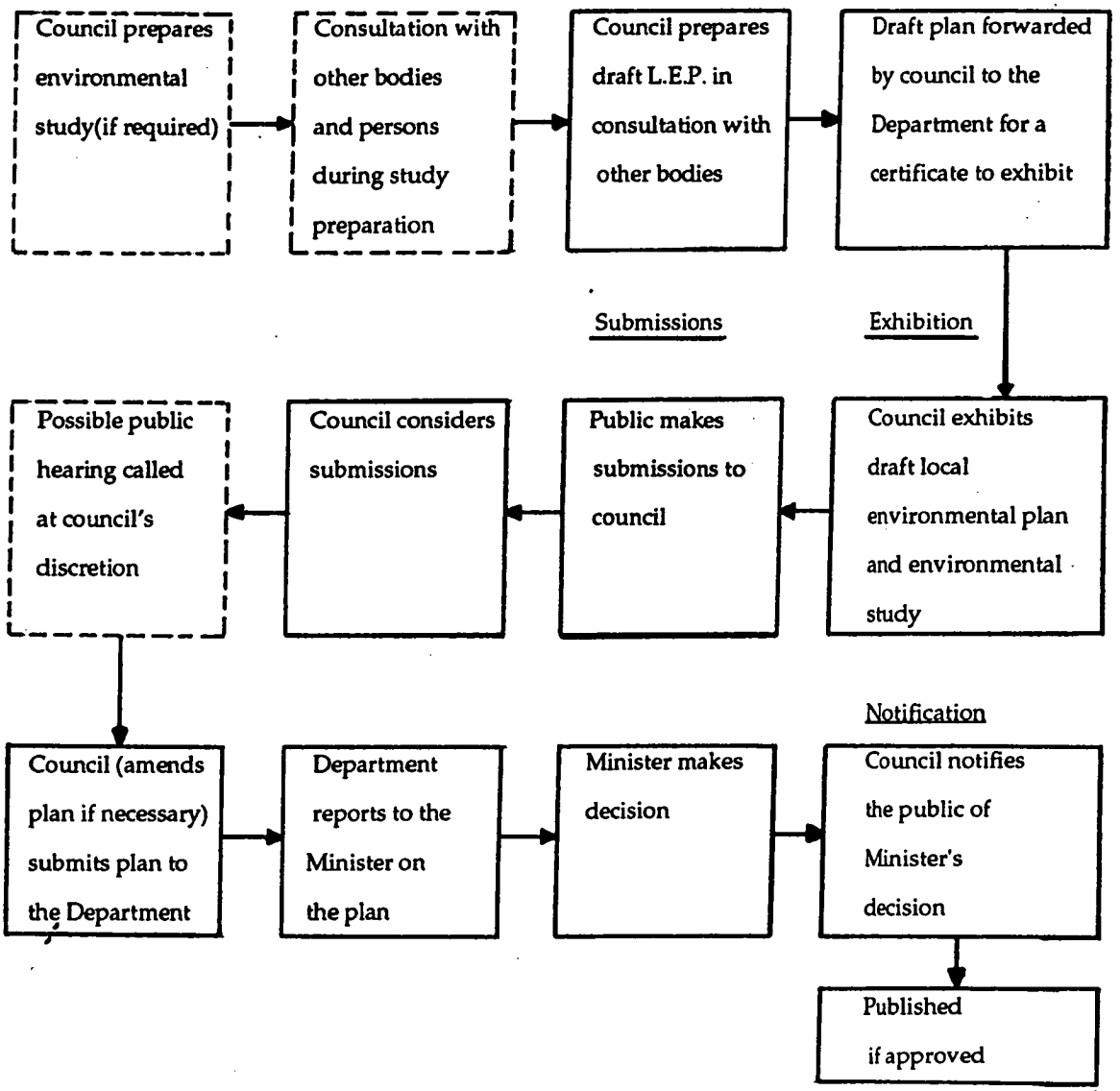
(iii) the subdivision of that land (Nott 1982).

There are two types of development, designed and ordinary. The planning legislation requires that designed development, which covers more environmentally significant and important types of proposals, is accompanied by an environmental impact statement (Whitemore 1981). All other development applications need to show whether a proposed development has impact on the environment, and are obliged to demonstrate what measures will be taken to reduce any likely adverse impact. Moreover, the legislation states that in determining any development application, an approval authority should consider the following aspects:

(i) the impact of that development on the environment (whether or not it is the subject of an environmental impact statement), and, where harm to the environment is likely to be caused, any means that may be employed to protect the environment or to mitigate the impact;

Figure 6.1: Local environmental planning (L.E.P.) process in NSW

Note: Stages in solid-ruled boxes are mandatory, others are discretionary



Source: Department of Planning, 1989; *The Environmental Planning and Assessment Act 1979: A Guide for Local Government*; Crown, Sydney.

(ii) the effect of that development on the landscape or scenic quality of the locality;

(iii) the social effect and the economic effect of that development in the locality; and

(iv) whether adequate provision has been made for the landscaping and whether any trees or vegetation on the land should be preserved (Whitemore 1981).

6.4.1.2 Victoria

In Victoria, statutory planning is sometimes referred to as development control, and is used for the formulation and administration of regulations for the use and development of land. These are mostly embraced in each municipality's planning scheme, and operate by means of a system of zoning. The provision of schemes and the procedures for scheme amendment and scheme administration are prescribed in the *Planning and Environment Act* 1987 (Eccles and Bryant 1991). As mentioned previously, a planning scheme is the vehicle through which the objectives of this legislation are to be delivered at State, regional, and local levels.

At the local level, it is the role of the local council to prepare the planning scheme. Local Governments have a central role in land-use planning in terms of both planning schemes and planning permits. It is the task of councils to formulate detailed aspects of planning schemes, undertake land identification, and control any activities relating to land use. However, these controls must be compatible with State government policy and strategy (Mitchell and Brown 1991).

Strategic planning, used to refer to the research and policy development aspect of the planning process, is the formulation and evaluation of planning policies and the mechanism for implementing the policies. Land use and development fall into the category of planning policies. In preparing a planning scheme or an amendment, local councils have to take into account any significant effect which the scheme might have on the environment, as well as social and economic effects of planning schemes and scheme amendments (Eccles and Bryant 1991).

Furthermore, local councils still have a conspicuous role in the development approvals process. In deciding whether to issue a permit, Local Governments must consider all objections and other public submissions made in relation to the proposal, the decision or comments of relevant government agencies, and any significant impacts the proposed development may have on the environment (Eccles and Bryant 1991).

6.4.1.3 Queensland

The *Local Government (Planning and Environment) Act* 1990 introduced a new approach to town planning in Queensland, with the aim to streamline planning and development processes in the State (Arnold 1992). The law obliges Local Government to prepare a planning study in connection with the formulation of a planning scheme, a strategic plan, and a development control plan.

In preparing the planning study, Local Government has to consider relevant State planning policies. In conducting the planning study, the local authorities are required to consider a range of matters which include:

(i) regional land-use patterns;

(ii) any constraints and opportunities in respect of development;

(iii) regional or local economic and employment factors; and

(iv) public utility infrastructure systems and transport systems (Fisher 1993).

In respect of an application for a development proposal, the legislation states that Local Government has to determine whether an EIS should be done where the local authorities consider that the implementation of a proposal might have any effects on the environment (Fisher 1993). Not only does planning legislation enforce Local Governments to consider any environmental impact, but so do related pollution control laws.

Despite new legislation, existing laws in Queensland have to be complied with by Local Government. For example, the 1979 version of the Queensland *Clean Water Act* 1971 requires Local Governments to have regard to the provision of this Act when local authorities:

(i) prepare or amend a town planning scheme;

(ii) make a by-law or ordinance to regulate and control the use of land or the erection or use of buildings or other structures on land pending the coming into force of a town planning scheme;

(iii) consider an application for the rezoning of land or for the use of any land, building or other structure under a town planning scheme; and

(iv) consider an application for approval of a subdivision of land (Fisher 1993).

6.4.1.4 Tasmania

Statutory and administrative duties in land-use planning in Tasmania were (until 1 January 1994) prescribed by the *Local Government Act* 1962. Provision for a Town and Country Planning system, and for specific controls, such as for subdivisions and building estates, were established by this Act. Under the Act, the Commissioner for Town and Country Planning was the responsible body for administering land-use planning and the formation of land-use policies at State level. At the local level, the Act provided for planning schemes to be prepared pursuant to the Act (Department of Environment and Planning 1992; Office of the Commissioner for Town and Country Planning [not dated]).

All Local Governments could prepare planning schemes for part or all of their boundaries. Once the planning schemes were approved, the councils were responsible for their administration. With regard to public submissions, the Act provided a mechanism to deal with councils' decisions related to the planning scheme by establishing the Planning Appeal Board (Office of the Commission for Town and Country Planning [not dated]).

In respect of the subdivision of land, applicants were to apply to Local Government in the first instance. However, it was not the responsibility of local councils to make a final decision. The *Local Government Act* 1962 stated that councils had to obtain consent from the Commissioner for Town and Country Planning for approval of any proposed subdivision before that approval was effective (discussed in Chapter 8)(Tyler 1988).

6.5 Conclusion

Land use issues are related to land-based resource allocation which may cause conflict between development and the need to protect and improve environmental quality. Resource use may contribute economic well-being, but also result in adverse effects on the environment. Accordingly, government intervention in land-use allocation is necessary for the common interest.

Both planning and environmental legislation, in conjunction with appropriate administrations, has been developed to cope with land-use management. In some States, the land-use planning systems are integrated with environmental protection mechanisms. Other States are considering such integration.

States and Local Governments have vital functions in land-use regimes, dependent on the planning framework formulated by States' legislation. Some States have enacted or are designing planning law with a view to more responsibility for Local Government to take account of broader environmental issues when considering land-use planning.

CHAPTER 7 SUSTAINABLE DEVELOPMENT CONCEPT

7.1 Introduction

Global environmental decline is associated with a variety of human activities, resulting in such phenomena as ozone depletion, global warming, and desertification. These problems have fostered public discussion of tensions and linkages between the environment and development, and of how the goals of economic well-being and environmental quality can be achieved. The concept of sustainable development has germinated from such interests (Rees 1988).

This chapter considers the development of thinking on sustainable development which emerged from the World Conservation Strategy of 1980 produced by the International Union for the Conservation of Nature and Natural Resources (IUCN). Sustainable development had been discussed before this, however (Adams 1990). For example, the United Nations Conference on the Human Environment in Stockholm in 1972 produced the idea of eco-development, which is closely related to that of sustainable development (Gardner 1989).

Subsequently, the concept of sustainable development has been refined, since the release of the Brundtland Report by the World Commission on Environment and Development (World Commission on Environment and Development 1990). It has become a goal for both developing countries and industrialised nations (Jacobs 1991). The influence of sustainable development and how it can be achieved has become a key issue for international discussion, as at the United Nations Conference on Environment and Development (UNCED) in 1992.

Acceptance of sustainable development is broadly addressed in this chapter, focusing mostly on Australia and New Zealand. Furthermore, its acceptance by the Tasmania Government, which is revitalizing its environmental and resource management systems, avowedly to achieve sustainable development, is examined.

7.2 Origin of the concept of sustainable development

Economic development has resulted in the depletion of natural resources and environmental decay. Development and environment have previously been separated, contributing to conflicts whose resolution has become a major challenge. Perhaps the best known example of integrating environmental and economic goals stemmed from the World Conservation Strategy (WCS) in 1980. Sustainable development has come to represent a new approach to these interactions (Jacobs 1991).

The WCS enumerated three main aims for nature conservation at the global scale: the maintenance of essential ecological processes, the preservation of genetic diversity, and the sustainable use of natural resources. The WCS proposed a number of approaches to achieving these objectives. For example, a priority requirement for the sustainable use of resources was to ensure that access to natural resources does not exceed the resources' capacity to sustain exploitation, to reduce excessive yields to sustainable levels, and to maintain the habitats of resource species (Adams 1990). Conservation needed a high priority and integration with development processes from the establishment of policies right up to implementation and subsequent operation (Adams 1990).

The concept of a relationship between environmental protection and economic development was then further developed by the World Commission on Environment and Development, notably the Brundtland report released in 1987. This widely accepted document proposed a more considered approach to the interaction between economic development and environmental interests (Jacobs 1991). Sustainable development was declared as the central goal of the report, and was defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development 1990: 9).

The report began with the issue that economic development and environmental problems can not be divided. A connection between development and environment was drawn more clearly in a statement that "many forms of development erode the environmental resources upon which they must be based, and environmental degradation can undermine economic development" (World Commission on Environment and Development 1990: 3).

Equity and world poverty are closely linked as a main principle of sustainable development themes, as poverty is seen as a major contributor to global environmental depletion (Adams 1990). In this context, according to the World Commission on Environment and Development (1990: 3), "it is therefore futile to attempt to deal with environmental problems without a broader perspective that encompasses the factors underlying world poverty and international inequity".

Sustainable development gives a framework for achieving not only the creation of wealth and conservation of natural resources, but also equity at the international scale, or fair distribution of wealth and resources between developed and underdeveloped countries. Above all, a major theme of sustainable development emphasizes intergenerational equity so that future generations can enjoy an inheritance, at least comparable to that inherited by the present generation (Pearce, Markandya and Barbier 1989).

Achieving sustainable development requires attention to broad processes, such as natural resources utilization, structuring of political and socio-economic systems, and systems of production and technology (Adams 1990). These can be presented together in a strategy in pursuit of sustainable development. This includes:

(i) a political system that secures effective citizen participation in decision making;

(ii) an economic system that is able to generate surpluses and technical knowledge on a self-reliant and sustained basis;

(iii) a social system that provides for solutions for the tensions arising from disharmonious development;

(iv) a production system that respects the obligation to preserve the ecological base for development;

(v) a technological system that can search continuously for new solutions;

(vi) an international system that fosters sustainable patterns of trade and finance; and

(vii) an administrative system that is flexible and has the capacity for self-correction (World Commission on Environment and Development 1990: 109).

In summary, the divergent concepts of economic development and environment have been reoriented towards the theme of sustainable development. Approaches to sustainable development have been widely accepted in many countries to put this concept into practice. Essentially, these approaches are now on the global agenda central to the development of both economic well-being and environmental quality. These are discussed later.

7.3 Acceptance of sustainable development

As mentioned previously, the Brundtland report has contributed to further debate on sustainable development and its international and national acceptance. On the global scale, it became a central theme of the United Nations Conference on Environment and Development in Brazil in June 1992 (Johnson 1993).

In this conference, the international response to the world's environmental problems was discussed by national governments and related organizations. Consequently, the Rio Declaration on Environment and Development was signed by over 170 countries, followed by Agenda 21, the program for international action to cope with environment and development. Agenda 21 was a major output of the conference, and established a set of guidelines in pursuit of international cooperation to achieve sustainable development into the next century (Beder 1993; Johnson 1993). Agenda 21 contains the four main themes of social and economic dimensions, conservation and management of resources, strengthening the role of major groups, and the means for implementation (Johnson 1992).

At a national level, many countries have responded to the concept of sustainable development and have created national environmental policies based on it. Canada, for example, was the first country to respond to the initiative of the World Commission by establishing the National Task Force on Environment and the Economy in 1986. This body's tasks were to initiate and recommend action on integrating the environment and development (Rees 1988).

In New Zealand, natural resource management has been reshaped to sustain and protect the environment as well as economic development by adopting the concept of sustainable development. Previously, environmental planning had been weakened by resource management laws which had caused a number of problems, such as fragmentation, lack of coordination, overlapping and expensive administration. The ineffectiveness of earlier environmental and resource management laws was seen as due to the process of resource management, rather than their effects or outcomes. As a result, comprehensive reviews of associated major laws were undertaken (Ministry for the Environment 1988).

The *Resource Management Act* 1991 came out of this process, and underpins sustainable management of natural and physical resources. Sustainability has thus become a keystone of the new resource management reforms (Buhrs and Bartlett 1993). The Act sets up a framework for environmental policy, and decentralises authority and power (formerly resting with central government) to newly created local and regional governments for policy planning and decision making (Buhrs and Bartlett 1993). The Minister for the Environment has a major role in setting national environmental standards and issuing national policy statements to direct and guide local government decisions. Each regional council is responsible for preparing a single regional policy statement based on integrated resource management (Buhrs and Bartlett 1993).

In Australia, the concept of sustainable development has attracted the attention of the Federal government, resulting in the creation of a national strategy on environment and development, Ecologically Sustainable Development (ESD) (Sandford 1992). The goals of ESD are to improve "the quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends" (Ecologically Sustainable Development Steering Committee 1992: 7)

There are three main objectives specified to achieve ESD. These include enhancing individual and community prosperity and welfare through economic development, providing for intragenerational and international equity, and safeguarding biological diversity and ecosystems (Ecologically Sustainable Development Committee 1992). The national approaches to the strategic direction of sustainable development are classified into sectoral and intersectoral issues. The sector-based issues are relevant to agriculture, fisheries, forest use, manufacturing, mining, urban and transport planning, tourism, and energy use, energy production, and transport. The intersectoral

issues are to improve decision making, protect ecological systems and biodiversity, encourage economic growth, and provide for equity (Ecologically Sustainable Development Steering Committee 1992).

The implementation of the ESD proposals requires cooperation among different levels of government and communities. An Intergovernmental Agreement on the Environment (IGAE) was produced in 1992 as a mechanism for a cooperative national approach to the environment and development, and a cooperative arrangement between governments in a wide range of environmental management issues. IGAE is an agreement between the Commonwealth of Australia, all State Governments, the Australian Capital Territory, the Northern Territory, and the Australian Local Government Association (Anon. 1992).

At the Australian State level, the Tasmanian Government, for example, has introduced and shown a commitment to the theme of sustainable development. Environmental management systems and administrative structures have been undergoing a process of reform. The proposed system is an integration of planning and environmental management under umbrella legislation. Five new environmental and resource management-related laws were passed in 1993, and became effective in January, 1994. New environmental protection legislation was passed in August 1994.

The new laws comprise five Acts: the *State Policies and Projects Act* 1993, the *Land Use Planning and Approvals Act* 1993, the *Resource Management and Planning Appeal Tribunal Act* 1993, the *Land Use Planning and Approvals (Consequential and Miscellaneous Amendments) Act* 1993, and the *Approvals (Deadlines) Act* 1993. This legislative package is designed to "establish an integrated resource management system, to rationalise regulatory controls and produce better environmental outcomes" (Bingham 1993: 1). New State-level planning and development assessment procedures have been created, and at the local level, planning and development assessment processes have been consolidated (Department of Environment and Land Management 1992).

Central to the new laws articulating integrated resource management is the *State Policies and Projects Act* 1993. Under the central objectives of this Act, the processes of implementation, and the responsible agencies for resource and environmental management are created (Royal Institute of Public

Administration Australia 1993). The Act establishes a framework for State sustainable development policies (see Appendix 2, p. 145).

Can sustainable development be achieved through these measures? This issue is discussed in Chapter 8 which examines the new Tasmanian resource management and planning system, with particular attention to the integration of land-use planning and environmental protection, including EIA.

7.4 Conclusion

As a starting point this chapter introduced the concept of integrating economic growth and the environment through the work of the World Conservation Strategy, the World Commission on Environment and Development, and lately the United Nations Conference on Environment and Development. These international organizations have tried to determine how the consequences of economic growth can be stabilized to protect environmental quality.

Sustainable development themes have been widely adopted internationally, nationally, and locally. It has become national policy in some countries. At the international level, the United Nations has cemented the themes of sustainable development as the focus of incorporation of global action, setting the stage for international efforts. Approaches to achieving sustainable development have been implemented at both national and state levels in the case of Australia and New Zealand to facilitate the roles of government and associated organizations. Approaches to sustainable development are complex and difficult.

The principal benefits of sustainable development need to be expressed as concrete ideas which are widely accepted across the broad community. Some countries have reshuffled their national environmental administration and prioritised environmental considerations through the enactment of environmental law, to cope with the changing situation.

Approaches to sustainable development within a legislative framework might not be achieved in a practical sense due to a lack of commitment by a wide range of governments and communities. As the World Commission on Environment and Development stated, "environmental protection and sustainable development must be an integral part of the mandates of all agencies of governments, of international organizations, and of major private-sector institutions" (Buhrs and Bartlett 1993: 141). It is important, however, that

the sustainable development concept has provided a further platform for ideas of integrating management of human activities.

CHAPTER 8 ANALYSIS AND DISCUSSION OF THE TASMANIAN SITUATION

8.1 Introduction

In Tasmania, a new system of resource management and planning has emerged. The legislative framework, the Resource Management and Planning System, embodies a combination of planning and environmental management aimed at delivering sustainable development. The legislation took effect on 1 January 1994. Most written material on it is from the government perspective only, and there are no critical academic articles published yet. This has imposed limitations on this chapter. Interview work was seen as important to get points of view from key people involved.

Ten people were selected on the basis they were 'key informants', in that their positions meant their roles relative to the legislation covered a wide range of involvement (see list of interviewees, Appendix 1, p. 143). The ten were State policy makers, planning officers at State and Local levels, a State environmental manager, academics in environmental and planning fields, a Tasmanian Green Independent politician and environmental lawyer, and a Director of the Tasmanian Conservation Trust.

The main objective of the survey was to gather a wide range of opinion which could be used to inform the author's knowledge of and judgement about the new system. For example, two local planners were chosen on the basis that, under the new legislation their roles have been broadened. Their understanding of their changed roles and of the new legislation in general was considered important information.

'Environmentalist' representatives were chosen to get possibly more critical views than the government perspective. The two Tasmanian University academics were also interviewed in order to canvass a critical perspective. A small number of respondents were selected as a prime intention was to converse with a range of prominent people in some depth, rather than institute a larger-scale survey to cover trends in opinion. Indeed, it is doubtful whether the public at large would have much knowledge of the new system at this time.

The questions covered perceptions of the old land-use planning and environmental protection mechanisms, and major elements of the new legislation. A particular focus was the theme of integrating environmenal management with land-use planning. Almost all respondents had negative views of the old planning system and environmental practice. By contrast, the new environmental planning reforms and related laws were perceived as a major step forward.

The central idea of an integrated approach was viewed positively by interviewees, in particular the statutory requirement for EIA to be part of some land-use decision making. Responses indicated, however, that there were obstacles to effective implementation of the legislation. These are discussed later.

Interview forms were compiled, and sent to most interviewees at least a few days beforehand (see questions in Appendix 2, p. 144). The author used the interview form to question each respondent individually. Each interview took about one hour, and the author was accompanied by an English-language tutor to assist with any language difficulties (the thesis author's native language is Thai). The interviews were also tape-recorded for later reference in case the written record at the time of interview was not clear enough .

To understand the Tasmanian situation, it is important to examine the previous planning system mentioned in Chapter 6. Major components of the new planning reforms are then presented. The discussion draws on the author's own analysis of the legislation and governmental documents, on the one hand, and on the interview information, on the other.

8.2 Previous Tasmanian land-use planning and environmental legislation

The previous planning structure was based on the statutory zoning system established under the *Local Government Act* 1962. The Act was based on legislation drafted in the 1940s (Department of Environment and Planning [not dated]). Planning was basically concerned with the use and development of land, and the system did not allow for innovation nor was it able to deal with the changing situation. Land-use issues were almost entirely matters for Local Government (Iles 1991).

In 1975 and 1980, there were plans for a much wider Planning and Development Bill, but they were not successful. The proposed approach differed from the old in suggesting a more integrated form of planning. For example, the reforms encompassed environmental considerations in the planning process, such as the protection of historic buildings (Iles 1991). In addition, a revitalized planning system was proposed in an overall framework which covered socio-economic, human and physical aspects through formulation of goals, objectives, and policies (Iles 1991).

The *Environmental Protection Act* 1973, was designed to deal with environmental issues for operations on individual premises on a point source discharge basis. Its enforcement was weak, and penalties for non-compliance were minimal. In addition, it was related to inflexible regulatory standards and rarely gave an incentive to lift environmental performance (Environment Institute of Australia, 1994).

A further deficiency of the Act was that environmental issues were separated from the other components of planning. This led to many overlapping functions, such as the duplication of development approval processes. Assessments for environmental effects were not applied to a large number of small developments. These small, 'non-scheduled' developments included quarries, small factories and businesses. This deficiency became an important factor in environmental degradation. It was 'death by a thousand cuts', and local Government mostly did not take on board an environmental protection agenda (per. comment, Peter Hay). Some characteristics of the system are broadly illustrated in Figure 8.1.

The ineffectiveness of the previous land-use planning and environmental performance is congruent with critical views from the interview informants. The interviewees regarded the function of the planning system as poor to very poor while they rated the environmental management operations under the *Environmental Protection Act* 1973 as fair to poor (see Table 8.1, p. 95). This Act was commended only for regulation of pollution of larger or 'scheduled' premises required to meet specific emission standards established by regulation.

Figure 8.1: Deficiencies of planning and environmental controls in Tasmania prior to 1994. Information was obtained from interviews and literature.

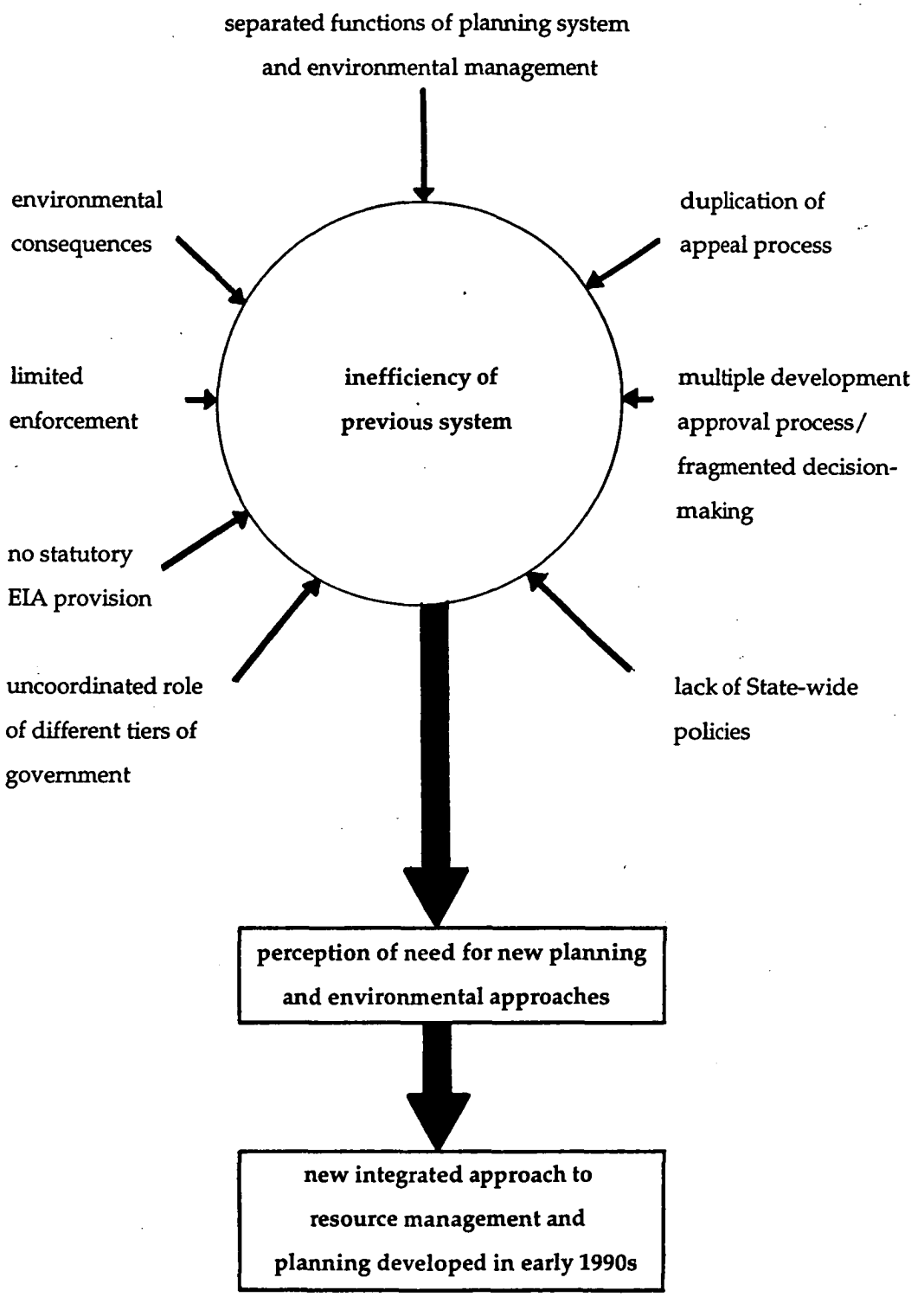


Table 8.1: Perceptions of interview respondents about land-use planning and environmental management in Tasmania under the *Local Government Act* 1962 and the *Environmental Protection Act* 1973

	Responses				
	very good	good	fair	poor	very poor
1 Land-use planning	-	-	2	5	3
2 Environmental management	-	-	4	5	1

Note: See Question 1, Appendix 2, p. 144

Major negative aspects of land-use planning and environmental protection put forward by the respondents can be further broadly summarized as follows:

(i) A lack of regard for environmental control in the use of land for development resulted in environmental degradation, particularly through land-use decisions at the local level.

(ii) Project assessment was inadequately addressed. The environmental problems associated with storm water and vegetation removal as a consequence of proposed development, such as subdivision of land and residental development, were not sufficiently taken into account.

(iii) Most respondents considered that Local Government generally demonstrated a lack of commitment to environmental management.

(iv) Local land-use planning responded mostly to the interests of local developers.

(v) There has been an absence of a long-term strategic planning framework at the State level. This constitutes a major factor contributing to an *ad hoc* decision making approach. In addition, there has been no overall land-use policy and planning at the State level.

(vi) Previous applications for development approval for activities on land have required applications to different government bodies leading to duplication. This includes the duplication of appeal functions, each approval being subject to appeal to a separate body.

(vii) Project assessment has not adequately functioned in non-scheduled development, such as subdivision development.

(viii) A major weakness of the *Environmental Protection Act* 1973 was the granting of a large number of ministerial exemptions. Major industries, such as the Mt. Lyell mine and the Electrolytic Zinc works, have been exempted from compliance with pollution regulations, and have continued to pollute on a massive scale.

(ix) Controversial developments with major impacts could be 'fast-tracked' by Acts of Parliament, bypassing normal planning and environmental assessment procedures.

Land-use planning and environmental protection, including approval and appeal processes were addressed in isolation. The current planning reforms were introduced in search of a more effective mechanism within a planning legislative framework that covers both State and Local Governments. A theme of integration is established in the new resource management and planning system by linking the planning component of decision making processes with an EIA mechanism.

8.3 Overviews of the new resource management and planning system

8.3.1 Preamble

The new land-use planning and environmental legislation package is as good as in any State of Australia and 'at the cutting edge' of reform, according to one of the interviewees. The foundation for the legislation is similar legislation recently enacted in New Zealand (per. comment, Richard Bingham).

The new planning legislation underwent long review and public consultation and was initiated by a Labor Government and continued by the present Liberal Government. The main intention behind the planning reforms is to consolidate

and rationalize the resource management and planning system within the context of sustainable development.

The legislation has a common objective 'sustainable development' which is incorporated by way of a Schedule to the Acts. The principle of sustainable development is incorporated into policies that are to be implemented and administered within the interrelated framework of legislation. Processes include policy creation, assessment criteria for land use and development, public consultation and appeal, and there are clear and defined roles for the State and Local Governments in planning and development controls. For the purposes of this section, four of the new six pieces of legislation are related to the theme of this thesis. In addition the *Local Government Act* 1993 provides complementary and updated legislation regulating and directing the functions of Local Government. These are the *State Policies and Projects Act* 1993, the *Land Use Planning and Approvals Act* 1993, the *Resource Management and Planning Appeal Tribunal Act* 1993, the *Environmental Management and Pollution Control Act* 1994, and the *Local Government Act* 1993.

8.3.2 *State Policies and Projects Act* 1993

The *State Policies and Projects Act* 1993 is the keystone of the Resource Management and Planning System. It provides the means to put in place State policy direction in the environmental and planning regimes by establishing State Sustainable Development Policies as a prime influence on the other pieces of legislation. It also provides the classification criteria for major development projects (Projects of State Significance) and sets the requirements for an integrated assessment of proposed major development. The Act also provides for the regular assessment of State-wide environmental conditions through State of the Environment Reporting.

8.3.2.1 State Policies

A State Policy must seek to further the objectives established under Schedule 1 of the Act, which defines sustainable development (see Appendix 3, p. 148). It is the responsibility of the Minister to give written direction to the Sustainable Development Advisory Council established under the Act, to prepare reports on draft State Policies, with an extensive process of consultation with relevant agencies and communities following completion of a draft policy.

8.3.2.2 Projects of State Significance

A project is of State significance if it has at least two of the following attributes:

(a) significant capital investment;

(b) significant contribution to the State's economic development;

(c) significant consequential economic impacts;

(d) significant potential contribution to the Australian balance of payments;

(e) significant impact on the environment;

(f) complex technical processes and engineering designs;

(g) significant infrastructure requirement;

(h) high public profile.

The Minister determines whether a proposed development is a project of State significance, and then directs the Sustainable Development Advisory Council (SDAC) to conduct an integrated assessment of projects. The SDAC produces a draft report, which is made available to the public for representation in public hearings. The SDAC considers but is not bound to take into account public comments in the production of the final report. Once cabinet decides on the final report there is no right to appeal by the public.

8.3.2.3 State of the Environment Reporting

The Sustainable Development Advisory Council has a mandate to prepare a State of the Environment Report every 5 years. This is to be available for public inspection and purchase. The Report will be concerned with the following issues:

(a) the condition of the environment;

(b) trends and changes in the environment;

(c) the achievement of resource management objectives; and

(d) recommendations for future directions on environmental management.

8.3.3 *Land Use Planning and Approvals Act* 1993

8.3.3.1 Planning schemes

The *Land Use Planning and Approvals Act* 1993 focuses on local land-use planning and development control processes. An objective of the planning system is to 'require land-use and development planning and policy to be easily integrated with environmental, social, economic, conservation and resource management policies at State, regional and municipal levels' (Tasmania 1993: 57) (see further objectives in Appendix 4, p. 150).

Definition of development under the *Land use Planning and Approvals Act* 1993 'includes:

(a) the construction, exterior alteration or exterior decoration of a building; and

(b) the demolition or removal of a building or works; and

(c) the construction or carrying out of works; and

(d) the subdivision or consolidation of land, including buildings or airspace; and;

(e) the placing or relocation of a building or works on land; and

(f) the construction or putting up for display of signs or hoardings

but does not include any development of a class or description, including a class or description mentioned in paragraphs (a) to (f), prescribed by the regulations for the purposes of this definition" (Tasmania 1993: 2).

Each Local Government is obliged to complete a draft planning scheme which must be consistent with the objectives of Schedule 1 and all State Policies, for the areas under its jurisdiction. However, local planning schemes have no statutory force over land declared as private timber reserves under the *Forest Practices Act* 1985, and mineral exploration under the *Mining Act* 1929. However, the Act 'binds the Crown' in all other aspects.

The Act establishes the Land Use Planning Review Panel to approve planning schemes and interim orders and amendments to planning schemes. The Panel is subject to the directions of the Minister in relation to its function. A draft planning scheme, after approval, must be exhibited for public inspection and representation.

8.3.3.2 Provisions in relation to enforcement of planning schemes

1) *Development control*

Planning Authorities (both local government and Marine Boards) must ensure that authorization of land for development furthers the objectives of Schedule 1, and is within the context of the planning schemes or interim order (a provision allowing for the development of land before the draft planning scheme or amendment is finally approved). Planning authorities have the statutory power to refuse or permit a development application. The Act requires the planning authorities to consult with relevant agencies if an application or a permit is sought.

2) *Planning appeals and civil enforcement*

The Act provides for individuals to appeal to the Appeal Tribunal against a decision of a planning authority on the development of land. A provision of the Act allows a planning authority or a person who, in the opinion of the Appeal Tribunal has a proper interest in the appeal, to appeal against a person or company who contravenes or fails to comply with a provision of the Act. If the Appeal Tribunal is satisfied with the grounds of that appeal, it has the power to prevent the contravention, either permanently or temporarily, or preclude any use or development of land to which the contravention relates.

8.3.4 *Resource Management and Planning Appeal Tribunal Act* 1993

The Act establishes the Resource Management and Planning Appeal Tribunal as a body to review or adjudicate disputes over administrative decisions of the Land Use Planning Review Panel and the Environmental Management and Pollution Control Board. In addition, the Appeal Tribunal has a mandate to deal with civil enforcement issues in resource management and planning matters. One objective of the Act is to consolidate the resource management and planning appeals within a single body.

8.3.5 *Environmental Management and Pollution Control Act* 1994

The Act is an integral part of the resource management and planning system. It comprises an extra layer of regulatory control related to planning control. It should be noted that the analysis here is based on the initial draft of the 1993 Bill and the explanatory notes tabled in Parliament (Department of Environment and Land Management 1993). Immediately prior to the production of this thesis a second draft of the Bill (Tasmania, 1994) was passed and became an Act of Parliament in August 1994. Parts of the 1994 Bill relating to the audit of environmental impacts were changed from those of the 1993 Bill, and these are discussed later in this chapter.

8.3.5.1 Environmental management and EIA

The Act establishes a wide range of instruments that can be utilized to minimize environmental consequences, and to encourage good environmental performance. A Board of Environmental Management and Pollution Control (established by the Act) may enter into environmental agreements with other persons. An agreement may require regular reports in relation to environmental performance. The agreement, however, must not contravene planning schemes.

In respect to Environmental Improvement Programs, the Board may require any person responsible for an activity of environmental significance (see Appendix 5, p. 152) to undertake an environmental audit. The Act authorizes the Board to impose an Environmental Improvement Program on an operator for an activity of environmental significance which may have environmental consequences.

The Act requires an EIA of the use of land for development which is classified according to three classes of activity as follows:

(i) Level 1 activities require a permit from the local planning authority under the planning scheme (under the *Land Use Planning and Approvals Act* 1993). Local Government, however, may refer an application to the Director of Environmental Management for assessment in accordance with the Environmental Impact Assessment Principles (see Appendix 6, p. 154), if it is a level 2 activity.

(ii) Level 2 activities which are of environmental significance are the responsibility of the Department of Environment and Land Management with regard to project assessment and enforcement.

(c) Level 3 activities are those declared as projects of State significance under the *State Policies and Projects Act* 1993. In this case, the Sustainable Development Advisory Council is requested to conduct an integrated assessment within the Principles of Environmental Impact Assessment.

8.3.5.2 Civil enforcement process

Provisions are included in the Act to enable the Director of Environmental Management, a municipality, or any person who, in the opinion of the Appeal Tribunal has a proper interest, to seek an order from the Appeal Tribunal in the case of contravention of the Act. The Appeal Tribunal may request the responsible person to stop the course of action that contributes to contravention of the Act either permanently, or temporarily.

8.3.6 *Local Government Act* 1993

The Act requires a council to prepare a strategic plan (at 5 year intervals) for the municipality. Environmental considerations are included in the strategic plan, which is exposed to public scrutiny (Local Government Office, 1994).

8.4 Appraisal of the planning reforms

8.4.1 Planning orientation and integrated approach

A land-use planning approach usually relies on the use of legislation to control environmental change, or to maximize environmental outcomes. Theoretically, the land-use planning process explicitly or implicitly encompasses environmental goals, through procedures for the formulation of plans, goals and objectives, and the generation and evaluation of an alternative plan. In addition, the planning approach needs a process of public participation. Without this, the merit of the planning system is decreased.

The Tasmanian consolidated planning and environmental management legislation appears to meet such criteria for a planning regime. The new planning regime takes into account environmental issues within its agenda of sustainable development (see Appendix 3 for the legislative definition of sustainable development, p. 148). Sustainability becomes the prime goal of the planning reforms, and is legally recognized as an integral part of the mandates of governmental agencies. A set of State Policies will be formulated, and eventually transformed into the State's environmental and resource management goals. This implies that planning itself will become an important mechanism dealing with environmental and resource issues.

Land-use planning assists in the regulation of the spatial distribution of human activities and environment within prescribed geographical areas, such as zoning for a part or the whole of a local area. In this context, land allocation for development and environmental issues interact. Land-based development for any purpose can be the initial cause of environmental consequences, and this factor needs recognition within the context of the planning regime. However, environmental agendas have been mostly neglected in Tasmanian land-use planning.

With respect to integrating environmental management within the planning system, EIA is given more attention in the new system as a tool for ensuring that environmental protection accompanies development. EIA assists in keeping environmental interests under surveillance more than the normal procedures of land-use control. EIA in Tasmania will hopefully be an effective tool in protecting the environment. All interviewees responded positively on the merits of EIA in these terms (see Table 8.2).

The majority of the respondents agreed that the EIA mechanism should be reliable in terms of most aspects of environmental protection. Significantly, three interviewees admitted to having no idea of its benefits. All three are planning staff who may not have experience in the environmental field. This issue is discussed later.

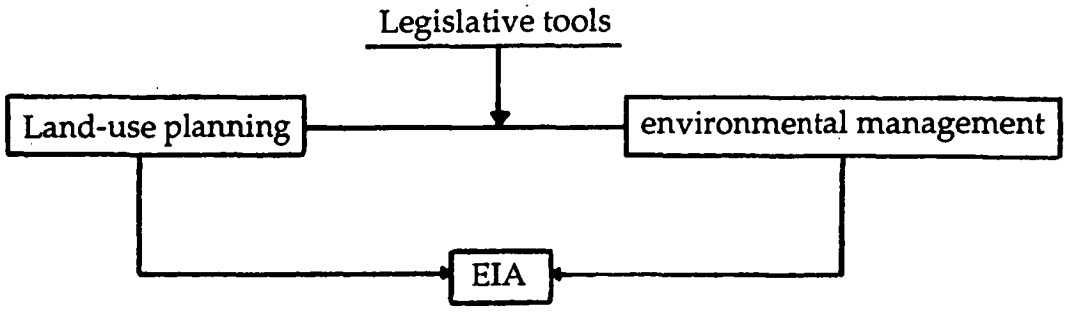
Table 8.2: Interviewees' opinions on EIA in the new Tasmanian legislation.

Question	Responses		
	yes	no	don't know
Would the requirement for EIA in the new legislation contribute to better environmental outcomes?	6	1	3

Note: See Question 5, Appendix 2, p. 144

The new laws are intended to link EIA with decisions on land-use allocation for development, as well as providing a means of co-ordinating and regulating the passage of a development application (see Figure 8.2). For example, the local planning authority is obliged under the *Land Use Planning and Approvals Act* 1993 to consult with relevant agencies, in the case of an application for a planning permit.

Figure 8.2: Relationship between land-use planning and environmental protection



Sources: Adapted from Department of Environment and Planning, n.d.; *Review of the Environmental Protection Act: Issues for Public Discussion;* Department of Environment and Planning, Hobart.

There is a requirement for an EIA from the development proponent on level 1 projects which fall within guidelines to be developed by the Department of Environment and Land Management. This requirement would be a significant tool in assisting local planning authority decision-makers to weigh the need for balanced development and environmental interests on the basis of informed knowledge of the likely environmental impacts.

8.4.2 Prospects for improvement in environmental protection and planning reform

Sustainable development has become a fundamental objective of the Tasmanian resource management and planning system, and has been absorbed into the planning criteria. Even though the incorporation of sustainable development required the support of senior bureaucrats and politicians, it came about largely in response to changes in community expectations of environmental performance, and the inappropriateness of the old approach. The legislation incorporates sustainability within the overall planning process, as well as specificially in policy formulation, local land-use planning, development decisions, appeal processes, and civil enforcement.

The question of whether the institutional reforms will contribute to an improvement in environmental outcomes has yet to be tested. However, all the interviewees responded in a positive manner, and had high expectations of the effectiveness of legislative reforms.

Most of the interviewees saw promise in integrating a plan-based approach and environmental protection and the ongoing processes of development assessment. Environmental considerations are put in place in the new planning agenda, ranging from environmental policy to implementation, and operational and appeal processes, with fairly explicit administrative arrangements between relevant governmental agencies. These include, for example, a shared responsibility by tiers of government for resource and environmental management.

Environmental questions are taken into account in the development of State Policy. One benefit of State Policies is the provision of a basic direction for local and relevant governmental agencies in the pursuit of more integrated policy development. At the present time (August 1994), new policy is being developed in a number of areas, such as coastal policy, water policy, and solid

waste management. Every local planning scheme will have to be consistent with State Policies.

Another improvement in planning emerges at the local level where environmental issues are taken into consideration at the stage of preparation of the local strategic plan under the *Local Government Act* 1993. In addition, a local planning scheme will have to determine preventive measures for the predicted environmental consequences of land-based development. More importantly, the subdivision of land, which was virtually never subject to EIA, is now incorporated within the new land-use planning legislation, resulting in project assessments being required for subdivision. Further integration will occur with a developmental approval process that involves a single appeal body.

In respect to planning control, EIA is linked to the development approval process, and can be legally enforced to ensure that planning decisions are considered in relation to environmental questions. One likely benefit of establishing a legislative base for EIA is to ensure the compliance of some authorities and to avoid political pressures for development which could undermine non-statutory procedures. This should contribute to more effective environmental considerations (Fowler 1985). Furthermore, EIA provides for the submission and consideration of public comment, thus contributing to a significant role for the public in decision-making. If EIA is non-compulsory, public involvement is rare within the Australian experience (Fowler 1982; 1985).

Another important management tool is State of the Environment Reporting which represents an endeavour to provide an accurate and comprehensive profile of the State's environmental condition at regular intervals. If conducted effectively, it will be useful as the State's resource and environmental data bank. It will support the policy-maker and decision maker to identify the implications of environmental change and resource conditions (per. comment, Bob Davies). The information collected can hopefully be used to adopt or reset policy direction sensibly, and to establish priorities for action within the requirement for sustainable development.

The new legislation, unlike the previous system, gives an opportunity for civil enforcement proceedings against those who contravene or neglect to comply with a new planning law (per. comment, Gerry Bates). It rests with the community to take action, however. Environmental groups or other members

of the public can take the opportunity to scrutinise the performance of statutory authorities or relevant persons concerned with resource use and environmental effects (per. comment, Michael Lynch).

The planning and environmental legislation reforms are a new phase in the State environmental policy and planning, establishing an integrated approach to land-use planning and EIA, and include the linkage of the planning approval and appeal processes. This is considered by most of the interviewees as being the best achievable in the current political climate, and an improvement, at least for the present. The new framework for environmental planning and resource management is seen as a promising strategic approach.

It is not only the legislation which contributes to better environmental outcomes, but also the responses of all sectors of the community and government to the reforms. Public consultation and participation is at least addressed at all levels of the new legislation, ranging from policy development to project assessment. In the opinion of the informants, this mechanism could be effective in ensuring bureaucratic responsibility.

8.5 Discussion

8.5.1 Better environmental outcomes: prospects and obstacles

Central to the modernised Tasmanian legislative system is the achievement of environmental objectives within the context of sustainable development. The planning reform might have both significant negative and positive effects on the functions of the State and Local Government, and the community as a whole. However, the new situation of environmental and resource management may be difficult to administer or implement. It is difficult to identify the obstacles as the new legislation has been operational only since 1994. As Bates (1994) stated, the effectiveness of this legistion can only be known in the years ahead.

8.5.1.1 Political interference

Some potential problems, however, can be identified now. The production of State Policies could be thwarted or watered down for political reasons. In respect to policy formulation, one interviewee, a State Green Member of Parliament, accused the Minister for Environment of pulling back from

approving a State coastal policy. Unplanned and uncontrolled development activities, including urban expansion, have been damaging Tasmania's coastal environment (Green Week 1994). The Minister has the power to appoint the members of the Sustainable Development Advisory Council. Concern has also been expressed about whether the Minister might exercise influence over chosen appointees to the two bodies with a major contribution to the effectiveness of environmental management, the Land Use Planning Review Panel and the Sustainable Development Advisory Council (SDAC) (Bates 1994).

The SDAC has a prime function in overseeing reports on proposed Projects of State Significance which are set outside the normal planning process. The Minister is not bound by the Council's recommendations, including cases in which the Council has decided that, for environmental reasons, a proposed development should not proceed. Further, if the Parliament decides for a project, there are no rights of appeal against that decision, by the general public or affected parties. Apart from the public consultation aspects of the procedure, this is basically the same as fast-tracking under the previous system.

This means that this procedure is in the hands of politicians and frees the development of a Project of State Significance from normal planning controls, subjecting it to a special process in the political arena. If an appointed member can be directed by a politician, the functions of these two organizations may not be effectively and properly undertaken, and the merits of the new system may be devalued through a failure to legally enforce the principles of sustainable development (per. comment, Gerry Bates).

Ministerial decree is potentially an obstacle impairing the planning system, and its presence might demonstrate a general lack of political commitment to environmental affairs. Environmental objectives are therefore ultimately dependent upon a supportive community foundation of interest and values. The political culture still seems unable or might not want to fully recognize, advocate, and practise ecological rationality. Rather it seems that it regards it as threatening. Perhaps the rationale behind the presence of the ministerial decree is to provide government and business interests with a means to overcome environmental obstacles to development. In addition, the community as a whole will have to commit itself to its environmental interests, since the legislation encourages participatory roles in almost all the processes of environmental planning and resource management.

8.5.1.2 Skills base and resources of local government

The new environment-based planning framework may have significant impacts on the relevant bodies responsible for the operation and implementation of the legislation at both State and Local level. Extensive changes to a new planning regime can contribute to a lack of clear understanding in the initial period. For example, the policy and planning authorities in the Department of Environment and Land Management are not familiar with the perspective of the new integrated approaches to planning and environmental protection. Interviews of planning officers at both the State and Local levels showed that they knew little about the role and function of environmental management under the provisions of the *Environmental Management and Pollution Control Bill* 1993, for example. Conversely, the officers of the environmental protection authorities that were questioned had little understanding about the function and provisions of the *Land Use Planning and Approvals Act* 1993.

This is a classic case of the effects of a changing situation in which the two functions have long been performed separately, and are, in consequence, a matter of skill-based resources. On this basis, Fowler (1982), questioned the prospect of incorporating environmental protection, particularly EIS, into the planning system. He considered that in Australian governmental structures the professional traditions below the State Government level are not as evident as in the United Kingdom. In the United Kingdom, the local authorities are well practised in undertaking investigations, in policy formulation, and in the implementation of environmental control below the central level.

It was suggested by some of the interviewees that generally Local Governments are lacking in staff with the necessary skills and experience to properly assess and manage the wide range of environmental issues that fall under their jurisdiction.

In Tasmania, as mentioned earlier, there has not been a tradition of local environmental management, whereas the new system provides more shared responsibility for local authorities. The lack of local expertise with respect to EIA has emerged as a major issue in the opinion of most of the key informants.

Another issue of the EIA requirements that should not be overlooked is that the local government authorities might financially disadvantage themselves by conforming strictly to EIA requirements. Approximately 60 to 75 % ot the

revenues of Australian Local Government are dependent on the values of land and on continuing development (Hall 1990).

In New Zealand, for instance, a developer 'is most privileged at the local level, and local politics tends to revolve around matters of land use and economic development, dominated by informal networks of local builders, developers, bankers, lawyers, retail merchants and politicians' (Buhrs and Bartlett 1993: 129). Development, prompted by economic growth, results in uncontrolled urban spread (Buhrs and Bartlett 1993). In Tasmania as elsewhere, it is not the nature and effects of a single development that have the most significant impacts on the environment, but the cumulative total.

The decision of whether or not a development will be allowed to proceed is not based solely on the result of the EIA process, as a number of factors, such as socio-political and economic factors, must be taken into account as well. In addition, the economic aspects of development often take priority over environmental considerations (Buhrs and Bartlett 1993). An example of this was the Silicon-Carbide Smelter at Electrona, where the provision of jobs and perceived economic benefits outweighed serious health risks. However, in the Tasmanian situation environmental interests might be taken into account or given more weight in the decision-making processes in the new planning legislation. These, however, depend on the responses of government authorities and the community.

One way of looking at these issues is through the cultural change that can occur within the community in relation to environmental perceptions. Most of the interviewees agreed that the community could be made aware of the wide range of environmental issues through a greater number of officials with understanding of environmental and sustainable development issues. Gerry Bates commented that the new legislation itself encourages the spread of environmental awareness locally. This means that theoretically every individual can be involved in environmental issues, ranging from policy creation up to monitoring environmental performance or civil enforcement. Further, community action can have a direct and significant influence on the environmental agenda at the State and Local levels by electing people who take environmental interests into account firmly and cohesively.

Bureaucrats will have to commit themselves to the environmental agenda as a major priority, for environmental interests to be judged with an equal

weighting to the desires of vested interests. Cultural change in regard to the environment might be a far-reaching goal and might be far-fetched as well, and time is needed to determine these issues. However, the new environmental planning and resource management regime at least incorporates some visions that might help stimulate change.

Another obstacle to positive environmental outcomes in Tasmania involves coming to terms with resource-based management in terms of human resources and expertise. Lack of human resources might impair the government's capacity to deliver environmental management policy. This situation might be worse at the local level, since responsibilities for environment management have been extended to local councils without provision of extra resources. A number of the interviewees were very concerned about this issue. Bob Graham commented that the problems might be reduced to some extent as a result of Local Government amalgamations.

The theme of integrating environmental protection mechanisms and land-use control became a sensitive problem in the United States. Rodgers (in Fowler 1982: 251) commented that "the preparation of assessments has required so much of the staff time of local planning agencies in California that this new tool threatens to absorb the time, energy and emotions of public officials and planning staff ...". In Tasmania a similar situation may occur.

In Tasmania, the EIA provisions are legally enforceable and, for Level 1 activities, are administered by the local authorities. EIA enforcement and implementation are important for minimising environmental degradation. To pursue this issue, suitably qualified environmental and planning professionals are needed. There is, however, the question of the level of commitment of these professionals to the issues. The outcomes are almost unavoidably a matter of the preferred political choices of the government (per. comment, Gerry Bates).

To summarise, the new approach to resource management and environmental planning is seen to be a useful mechanism for government and community as a whole, and is a big improvement over the previous situation. The legislation itself provides a variety of encouragements, particulary to communities, by providing access to the planning and decision making process. In turn the community has to hold governmental performance to account, as the most important factor that could devalue the planning system is the human element, such as political interference, business and bureaucratic self-interest and

community participation. However good the new planning framework is, without the commitment of the relevant parties, it will be in vain.

The major obstacles remaining after the implementation are: the potential for political interference including the continued granting of ministerial exemptions; and abusing Projects of State Significance procedures; and the possibility of influence over members of important decision making bodies. The other major potential obstacle concerns the ability of local government authorities to administer the environmental issues.

The environmental agenda must be extensively and firmly addressed with the political will of government authorities and the public will. Politicians can play a significant role in contributing to better environmental outcomes by appointing suitable people to function in the relevant environmental organizations, and by providing essential facilities so that relevant governmental institutions can perform their roles effectively and efficiently. The community itself has been given more tools to check and balance the performance of authorities, which includes any governmental performance, or any environmental malfunction or wrong doing by authorities. The outcomes rely on changing attitudes in all sectors, and is fundamental to achieving the goals of the current environmental planning and resource management reform.

8.6 Towards an integrated approach for sustainability

8.6.1 Preamble

In this section the current arrangements for EIA, in Tasmania, will be examined in detail. Based on suggestions from interviewees, and on analysis of literature by the author, the formation of either a central environmental agency or an independent body for both intial EIA and for ongoing monitoring will be proposed. This would be an important improvement over the newly introduced Tasmanian planning and environmental management legislation.

8.6.1 EIA in Tasmania: critique of current arrangements and possible improvements

In the new legislation EIA will become an integral part of the planning mechanism for considering the possible impacts of development proposals and for enhancing environmental conservation. EIA *per se*, is not a faultless tool and

should not be relied upon solely to evaluate the environmental impact of a project, and there are a number of factors that may undermine its value. Most importantly, the EIA for a project is usually produced by the project proponent, using consultants employed by that proponent.

Developers may expect the EIA to favour the development and there could be an expectation for the consultants to produce a report that is favourable to development. Even though, under the Tasmanian legislative reforms, the community has more opportunity to take part in an EIA procedure and in the decision-making processes for planning approvals, this might not, on its own, ensure that the project impact on the environment is properly assessed. Also there might be political pressure to decide in favour of development.

Two possible options for solving this problem are through the establishment of a government or independent agency for the management of project assessment and ongoing monitoring. There are in other countries models for such an agency. The United States has a federal body, the Council on Environmental Quality which is statutorily established under the *National Environmental Policy Act* 1969, to monitor the implementation of federal, state and local environmental legislation (Leeson 1994). However, this agency does not carry out an EIA before the project is begun.

The functions of a government environmental agency would be to generate the initial EIA, and to be responsible for the ongoing monitoring. This body could be an integral part of the Department of Environment and Land Management.

In the case of an independent agency, such as an EIA Council, it would inevitably encompass appointed specialists, and could be independent and free of the political arena. It must have statutory status to administer its tasks properly and effectively, and it is also most important that representatives chosen by the public be appointed as a part of the Council's committee to become a voice for the wider public. The Council's function would be to play a significant role in project assessment and the authority could represent the State and Local Governments, provided that this body is established on a statutory basis.

EIA administered by an independent agency, on behalf of a government organization, or by government itself might enhance environmental outcomes

as opposed to assessment by the project proponent, which can be more concerned with downplaying impacts.

An important role of an EIA body with proactive institutional arrangements and capacities is to oversee procedures as an integral part of statutory planning processes. The proposed approach to environmental protection, if it can replace the established current EIA arrangements will enhance not only the environmental benefits, but also other administrative functions. The proposed new approach to EIA practice includes a large number of fruitful dimensions as follows.

(i) A central body conducting EIA, would lead to increased effectiveness and efficiency in project evaluation with a wider range of potential environmental implications being thoroughly assessed.

(ii) This, in consequence, implies that the process will enhance its credibility and acceptance across the community.

(iii) Regardless of other factors, cohesive evidence of environmental disturbance could make pro-development oriented decision-makers reweigh their decisions.

(iv) When environmental factors are rigorously addressed, the relevant decision-makers may be more readily convinced of their importance.

(v) As a result of a more acceptable project assessment, a significant contribution is made to alleviating likely environmental conflicts among affected groups, and the community as a whole.

(vi) Accordingly, the number of environmental issues taken to the Resource Management and Planning Appeal Tribunal could be expected to reduce, since it is anticipated that community groups and vested interests would largely be satisfied with the outcome of an EIA. However, this may not be the case in regard to developers, who may be expected to appeal planning decisions.

(vii) With more reliable outcomes, EIA could largely mitigate monitoring tasks for post-development assessment in relation to the future environmental change.

8.6.3 Implications of integrating an audit of environmental impact in the planning system

The EIA approach to predicting the possible environmental effects of development activities is an important means of determining possible changes in the environment, focusing on an evaluation at the pre-approval stage. To be effective, the EIA approach should include ongoing monitoring of environmental quality at the implementation or post-development stage, which could be carried out through an audit of environmental impact.

One benefit of an audit of environmental impact is to 'ensure that commitments made in the EIS have been implemented or the predicted level of impacts is not exceeded" (Jenkins 1992: 282). In addition, Munro, Bryant, and Matte-Baker (in Garner 1989: 349) place an emphasis on the useful function of the audit of environmental impact in "determining whether interactive organizational arrangements and capabilities are successfully binding EIA to the broader planning processes".

In this context, environmental appraisals, pre and post-development, are thoroughly investigated, and the two times of assessment could lead to significant improvements in the effectiveness of environmental protection. Environmental audit (EA) is applied under the Tasmanian *Environmental Management and Pollution Control Bill* 1993, but reading of the Bill indicates in the author's opinion that EA applies only to activities of environmental significance (Level 2 activities). In addition, a decision to require or not require EA is still in question, and remains at the discretion of the Director of Environmental Management.

Section 24(1) of the Bill 1933 states that "the Director may, by written notice served on a person, require that person to undertake, or cause to be undertaken, an environmental audit of any activity of environmental significance for which that person is responsible if the Director considers that it is necessary or desirable for the protection of any segment of the environment" (Department of Environment and land Management 1993: 18).

In the Explanatory Notes to the *Environmental Management and Pollution Control Bill* 1993 in Schedule 1 (see Appendix 5, p. 152), "activities of environmental significance" are clearly identified as Level 2 activities.

It appears that the EA requirement has not been imposed on Level 1 activities, although an EIA is required initially. A large number of small, localized developments are not classified as activities of environmental significance, and therefore do not qualify for EA obligation. These developments often involve physical disturbance of their local environment, which for each development may be small but a large number of developments can have a significant combined impact. A prime example of this is the subdivision of rural and bush land where a single subdivision has a small impact but major impact results from additional subdivisions.

In the 1994 Bill which succeeded the 1993 Bill (refer p. 101) it has been made clear that the EA can be directed by the Board and is to be carried out by the proponent of the development in Level 1, 2, and 3 activities. Section 30 of the 1994 Bill states that "if the Board considers that an environmentally relevant activity has caused, is causing, or is likely to cause, environmental harm, the Board may, by written notice served on a person, require that person (a) to undertake an environmental audit of the environmentally relevant activity for which that person is or was responsible..." (Tasmania 1994: 22).

The definition of 'environmentally relevant activity' in the Bill 1994 is "an activity which may cause environmental harm, and includes a Level 1, Level 2 or Level 3 activity and an environmental nuisance" (Tasmania, 1994: 4). The provision for EA to occur for Level 1 activities supports the author's argument that EA for Level 1 activities are important.

The approach proposed is for the environmental protection mechanism to be further extended, and integrated with EIA in a single system. These dual regimes of EIA and EA could become an integrated component of the Tasmanian local land-use planning system, which would become more consolidated, and adverse environmental consequences minimised.

The multiple benefits and functions of this dual assessment approach occur in the two layers of its procedures. Firstly, a preliminary assessment of environmental questions occurs at the stage of the approval processes. Secondly, unpredicted environmental implications of those overlooked in the first stage will be determined.

In brief, an audit of environmental impact should become a supportive measure for the EIA as an added measure of environmental protection. This model, in

the case of the Tasmanian environmental legislation, should be applied, at least, to all development activities in which an EIA is required. This should be an integral part of the land-use planning process.

8.6.4 The integrated land-use planning approach and its benefits for sustainability

There have been increasing political pressures from environmental groups for better protection of the environment through more effective environmental planning. In the past, the planning system has not taken the environment sufficiently into consideration, and planning law lacked an environmental focus. The achievement of the concept of sustainable development in practice provides further challenges for a new approach to an overall planning regime. This can be seen in Tasmania where specific legal and policy mechanisms encompassing the planning framework have been developed to promote sustainable development.

Under these circumstances, land-use planning can respond to this challenge and provide a set of priorities and mechanisms that contribute to sustainability. Planning systems can play an important role in dealing with a wide range of matters, such as the conservation of resources and the protection of the environment. Within this context, planning can be a means of achieving environmental conservation through incorporating environmental protection tools such as EIA and EA.

In the land-use planning framework, environmental issues can be prioritised and considered from the early stages of planning formulation. In theory, one purpose of the planning system is to designate land for development. The appropriateness of the development activity to local environmental factors can be determined within the planning system, and the possible impacts of development on the the environment can be assessed.

The Tasmanian planning reforms attempt to address the relationship between land-use and the environment as a primary objective of the planning process by determining the use, development, and protection or conservation of land. This is underpinned by the foundation principle of sustainable development (Tasmania 1993). The principle of sustainable development is to "safeguard the life supporting capacity of air, water, soil and ecosystem" (Tasmania 1993: 56), and requires a mainstream planning approach under which the planning

authority has to consider environmental impacts as a primary factor whenever allocation of land-based resources is sought.

To reach this point, all Tasmanian Local Government authorities and also the relevant State Government authorities, have to prioritize the environmental implications from the earliest stage of planning. Kozlowski (in Kay 1994), has developed a planning approach that aims to limit environmental effects within a threshold. He considered that patterns of development should be confined within environmental limitations in relation to four dimensions: territorial (the area in which the development is located); quantitative (the level to which development can take place); qualitative (the type of development that is acceptable); and temporal (the rate and duration over which development occurs).

Most importantly, the territorial aspect but also the other aspects of environmental constraint should be used by the local planning authority to consider the environmental implications at the earliest stage of preparation of the planning scheme. This would become the first tier of an integrated stategy to land use planning and environmental protection. This will occur when the Local Government authority has the capacity to identify the environmental limits, and where the development is generated on the basis of compatibility. This implies that a large number of tasks must be performed by planners, such as a comparison of land-use requirement with the type of present land capacity, land suitability classification and location of expected change, and location.

The first priority should be to develop a local area plan to identify areas in which appropriate levels activities take place. This is a necessary task for the relevant authorities, if the objectives of the new planning system relating to environmental protection are to be achieved. It may be necesssary for the State Government to assist the Local Governments by providing more resources, advice, and technical assistance.

An additional benefit of this approach is that the process of assessment of a development permit by the Local Council would become easier since the environmental issues, including the allowable limits of environmental effects, are properly recognized in the first stage of creation of the planning scheme. This will ensure that environmental considerations are actually integrated into a planning process, and are not just words written in the legislation.

Following the proposal of a particular development, the EIA would be carried out. The EA would be done later. The multiple assessment should be reliable in ensuring long-term maintenance of environmental quality. Figure 8.3 is a model of the new Tasmanian planning scheme that demonstrates how the integrated planning approach will contribute to environmental protection and flows on to the end-point of sustainability.

The new Tasmanian planning structure is an integrated approach that includes a wide range and combinations of planning and assessment mechanisms that, in theory, should achieve improved environmental outcomes.

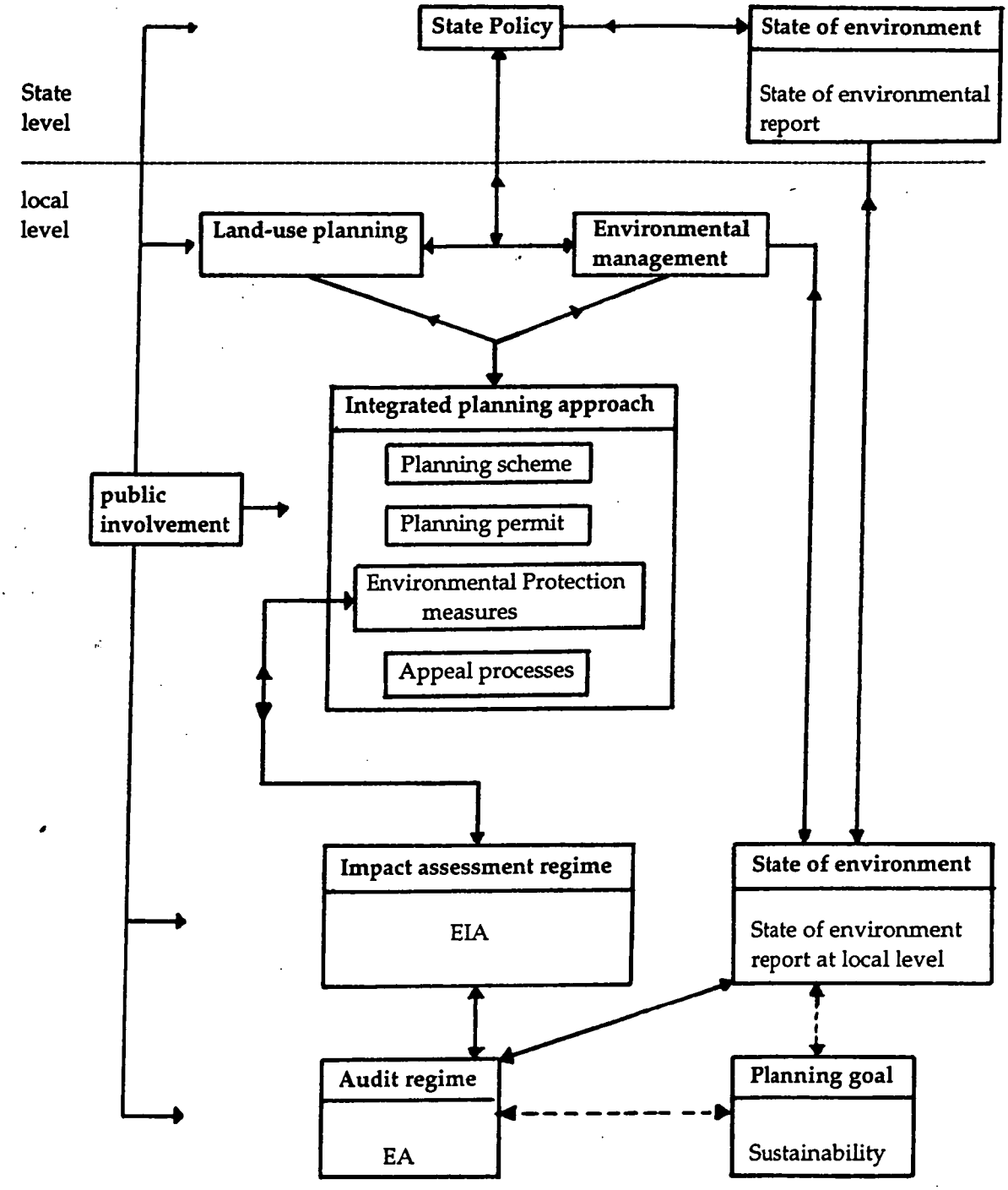
Its integrated approach could increase the effectiveness of local land-use planning by incorporating some additional requirements to maximize the environmental outcomes. The important additional requirements are firstly, that EIA should be undertaken by an independent statutory body or a central governmental agency. Secondly, specific statutes in State government legislation should direct that EA is to be a part of all local land-use planning schemes and that the EA should be undertaken by the same body that conducts the EIA.

It also provides a means of linking the State environmental policy with the local planning scheme through a co-operative approach between the two tiers of government agencies.

Under the new planning legislation, State Policies provide a foundation for the environmental resource management of the State as a whole. In addition, policy is legally enforceable in local land-use planning which has to function consistently with State Policy. This means that a component of rational planning should, in time, be practically applied in the formulation of the State's integrated management of environmental resources, and should achieve consistency within the different tiers of organization. The rational approach in the Tasmanian planning system should include the establishment of a co-ordinated arrangement among the relevant operational and administrative bodies to implement policy in relation to the environment.

The generation of State Policies is critical to support the process of preparation of a local planning scheme, and the lack of effective State Policies may undermine this process. It is necessary to blend environmental considerations

Figure 8.3: Schematic representation of the new Tasmanian integrated local land-use planning and environmental management approach to achieve sustainable development.



into all stages of the planning process from the State Policy right through to the local land-use plan. In this way, an integrated planning approach plays a positive role, not only in guiding the development process, but also in ensuring that environmental factors are considered from earliest stages, through preparation of the local planning scheme, to the assessment of the development proposal and in ongoing development assessment.

It would be useful for an EA to be required for all development activities together with EIA, and this could be extended to become a part of the normal local land-use planning system. Eventually, this procedure will occur as an additional part of the environmental protection tools to ensure that an assessment of the impacts of a project, and the measures that would be required to alleviate predicted environmental problems, are properly generated.

If these two approaches to ongoing development assessment, EIA and EA, are effectively and correctly performed, they will be important documentation indicating to what extent environmental quality will be altered. In addition, EIA and EA will interact to become an environmental data base to support state of the environment reporting. The environment report, in this regard, will produce an overall profile of the status of the local environmental situation.

The report on the local status of environment will in turn provide essential information at the State level, to indicate whether environmental objectives are being achieved or not. Real outcomes, however, depend on the entire process from the established environmental goals to successful implementation

If the goal of sustainable development is not met at the local level in Tasmania, the process must be re-evaluated at both the State and Local levels. In these circumstances, the integrated Tasmanian system, to be effective, should theoretically be adaptable and able to recognize uncertainty, allow for changes in direction that are necessitated by the revision of future predictions. It should also identify past mistakes, and formulate alternative plans according to any newly available evidence.

This planning approach will be further improved by the incorporation of a rational approach that allows good co-operation between the relevant government agencies to enable problems to be addressed and identified in an effective manner. As well, the good theroretical approach would involve the participatory planning approach which would legitimise the opportunity for

participation by the community including any affected groups. Participation would occur in the policy and planning stages. Therefore, a planning approach should be a combination of wide ranging environmental planning mechanisms that determine solutions to environmental problems.

In Tasmania, if the environmental goal of sustainable development is not met, an overhaul of environmental protection and land-use planning at the local and State levels is required to reshape a more effective and dynamic strategic plan approach that incorporates the prinicples that are mentioned above, then this will significantly contribute to positive environmental outcomes.

CHAPTER 9 SUMMARY OF DISCUSSION, RECOMMENDATIONS, AND WIDER CONCLUSIONS

9.1 Summary of discussion

It was not until early 1994 that a new era of more sophisticated environmental planning and resource management came into existence in Tasmania, in response to a changing situation and the concept of sustainable development. In supplanting the old planning system it was recognized that such dramatic change in the means of managing environmental resources would inevitably encounter obstacles.

An integrative environmental and resource management policy requires an extensive community-wide agreement. Endorsement of the need for the environmental and planning reforms is required not only in the political and bureacratic domain, but also in the wider community, together with a co-operative approach between these sectors. At the local level, environmental issues have become more challeging to local authorities, who must play a significant role in delivering the environmental message imposed by the new legislation. The attitude to local environmental management needs to change from a narrow economic perspective to one which is proactive, innovative, and progressive in respect of environmental interests.

It will take time for local planning and environmental officers themselves to appreciate the nature of environmental issues and how they are linked to the planning system. The legislative framework could be subverted if environmental objectives are incorporated into a plan simply to reduce political pressure from groups such as the conservation movement. In consequence, the environmental agenda might only be prioritized in order to enhance the profile of planning reforms or their asserted environmental objectives, without the political or bureaucratic will for full implementation or adequate resourcing.

Initial reactions to the new legislative framework appear positive and indicate optimism concerning the extent to which environmental and planning reforms can contribute to an improvement in environmental quality for the State as a whole. It is widely recognized that a key determinant in achieving rationalized planning reforms is the integration of land-use planning and environmental protection, associated with pervasive requirements for assessing the impacts of

proposed projects through EIA procedures. Integration could be further extended under the current planning system. An integrated approach to sustainability is seen to be a promising system in respect of preventing possible adverse effects on the environment.

The combination of the environmental management tools of EIA, EA, and State of Environment reporting, is perceived as a means to help combat environmental degradation, and provides important supportive information. The reports on environmental status will indicate whether the new reforms are achieving their objectives.

9.2 Recommendations

The end point of the analysis and discussion on the new Tasmanian planning legislation, with particular emphasis on the local integrated planning approaches to land-use planning and environmental protection, is to suggest some possible improvements. The following recommendations provide both general and specific suggestions which might usefully contribute to the challenge of implementing the new planning regime and achieving environmental sustainability.

9.2.1 General recommendations

(1) Currently Tasmania could be in a transition period towards a new era of environmental management which includes an enhanced role for the community. Understanding of the new legislation by the community as a whole is vitally important to enable involvement and participation in addressing environmental issues.

> Recommendation: A comprehensive and extensive educational scheme for the community is urgently required.

(2) Extended tasks are delegated to State and Local authorities, yet there is a pessimistic view of the capacity of local authorities to administer environmental issues.

> Recommendation: Skill-based education programs be established for environmental management and planning authorities, particulary at the local levels.

9.2.2 Specific recommendations

(1) At the local level, systematic study of land-use suitability is considered to be important at the preparation stage of local planning schemes. This should emphasize environmental constraints, and indicate any possible adverse effects on the environment in the use of land for development, at the stage of preparation of the local planning scheme.

> Recommendation: Local Councils should develop a local area plan considering land-use suitability and environmental constraint, and should reassess zoning at the preparation stage of local planning schemes taking the above into account.

(2) EIA procedures should be undertaken by an independent statutory body or a government body in order to produce better environmental assessment outcomes and to assist towards independence from political direction or pressure groups.

> Recommendation: Establish an independent statutory body or a central governmental body to conduct EIA. This body should include community representatives.

(3) The requirement for EA should be extended to all activities that have required an EIA (particulary Level 1 activities). The administrative body should be the same as that conducting the EIA. Essentially, an EA should be further integrated within the planning framework as the second tier of environmental management.

> Recommendation: Make EA a statutory requirement to be conducted by the same body that conducts EIA. The audit regime should become an integral part of land-use planning.

(4) Monitoring of environmental conditions (State of the Environment Reporting) at the local level should become regularly conducted by Local councils with a view to detecting the status of changing environmental conditions at regular intervals. Consequently, local environmental databases will become available as baseline information for the State of the Environment report at the State level.

Recommendation: State of the Environment Reporting of local conditions should become the responsibility of Local Government, integrated with State of Environment Reporting at the State level.

9.3 Wider conclusions

Environmental resources have been transformed for human needs, and consequently various forms of waste product have accumulated in the environment. This, to a large extent, is becoming a threat to humanity. Futher resource utilization requires a more effective approach through better resource management and environmental planning.

One approach to realign the relationship between resource allocation and environmental integrity has emerged in the strategy of sustainable development. However, this concept is still being actively debated and has a broad range of interpretations. One method of assessing the implications of sustainable development is to focus on land-use practice and environmental protection and how these contribute to better environmental outcomes.

This study examines the benefits of the integration of land-use planning and environmental protection mechanisms, with coherent environmental planning legislation and explicit administrative arrangements between relevant government agencies. In the case of Australia, the relationships between the State and Local Governments is leading to shared responsibility for environmental management.

Australian Local Government has been delegated extensive authority to protect, manage, and improve local environmental quality, and to make a significant contribution to a sense of responsibility for the local environment by the community as a whole. Furthermore, the community is encouraged and given more opportunity in addressing and participating in the broad spectrum of environmental administration, as seen in the current Tasmanian situation.

The State Governments needs to play a role of superintendent in a broad aspect of the environmental and resource policies. This, however, does not mean that the State Government entirely delegates the power over environmental issues to local councils, because questions of the capacity of local authorities still remain not only in Australia, but also in other countries. For example, in some States of the United States, resource and environmental management was

extensively delegated to local authorities, resulting in examples of large scale environmental degradation.

Another point is related to the structure of government, and the way in which departments are organized according to their principal functions concerning the environment. Land-related matters and environmental protection functions should not be administered separatedly, but instead should be amalgamated into one body to be managed with more operational flexibility and efficiency. As a result, with more effective institutional structures, it should become easier to implement these integrated approaches to land-use matters and environmental protection.

Integrated approaches to land-use planning and the environmental protection regime have now become more common, and are in place in a number of countries. In Australia, some States have recently endeavoured to revise their land-use planning regulations and integrate them within environmental protection mechanisms, such as EIA. A key issue that has to be recognized, however, is maintaining consistency when combining and integrating policy, implementation mechanisms, ongoing development assessment, regular assessment of environmental implications, and public involvement in all processes. This has to be developed over time.

The integration of environmental measures within land-use planning might come to represent the mainstream planning approach. In particular, it could become a potent model for achieving sustainable development. It is hoped that discussion of integrating land-use practice with environmental management can be aided by looking at some positive aspects of the current Tasmanian environmental management and planning framework, as well as some of its problems.

For example, in Thailand an important factor responsible for land-related problems is the lack of a coherent land policy. This is associated with the fragmentation of governmental agencies involved in land issues into twenty-four agencies and many committees with overlapping responsibility (Thailand Development Research Institute 1987). Streamlining processes, and development of an integrated approach and shared responsibility for environmental management is urgently needed, extending right down to the local level. This could lead to a rationalization of the environmental and resource management and bureaucratic systems in Thailand through new

legislation, with a recognition of the importance of community involvement in the process. Despite the great difference, much could be learned from experience in Tasmania and elsewhere.

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APPENDIX 1 LIST OF INTERVIEWEES

1 Bob Davies, Policy Division, Department of Environment and Land Management

2 Robert Giblin, Manager of Plannning Services, City of Glenorchy

3 Bob Graham, Lecturer (formerly Town Planner, City of Hobart), Department of Geography and Environmental Studies, University of Tasmania

4 Ian Sansom, Planning Division, Department of Environment and Land Management

5 Gerry Bates, Member of Tasmanian House of Assembly (Tasmanian Green Independents) (formerly Lecturer in Environmental Law, University of Tasmania)

6 Michael Lynch, Director, Tasmanian Conservation Trust

7 Peter Hay, Lecturer, Centre for Environmental Studies, University of Tasmania

8 Richard Bingham, Director of Policy Division, Department of Environment and Land Management

9 Tony McMullen, Planning Division, Department of Environment and Land Management

10 Warren Jones, Division of Environmental Management, Department of Environment and Land Management

APPENDIX 2 KEY INFORMANT INTERVIEW QUESTIONS

Note: The following are the questions from the interview form used. It is a "short form" in that the spaces for writing extended comments from informants are not included.

Interview Form Tasmanian Land-use Planning and Environmental Management and Pollution Control Legislation: its relationship to positive environmental outcomes.

1 How do you rate the following in contributing to positive environmental outcomes in Tasmania?

(a) land-use planning mechanisms under the Local Government Act 1962 (before the new Resource Management and Planning System)

Very Good	Good	Fair	Poor	Very Poor
(.....)	(.....)	(.....)	(.....)	(.....)

(b) the Environmental Protection Act 1973

Very Good	Good	Fair	Poor	Very Poor
(.....)	(.....)	(.....)	(.....)	(.....)

Please add some general comments (but see also Question 2)

2 Please now make some specific comments on the adequacy of these Acts for environmental outcomes, using the following headings if you wish:

(a) integration (or otherwise) of functions of the Acts
(b) land-use planning at the State level
(c) land-use planning at the local level
(d) environmental protection at the State level
(e) environmental protection at the local level

3 Did the previous arrangements for Environmental Impact Assessment (EIA) in particular, contribute adequately to environmental protection?

(.....) yes
(.....) no
(.....) don't know

Please add some further comments

4 Do you think the *Environmental Management and Pollution Control Bill* 1993 would contribute to better environmental outcomes?

5 Do you think that the requirement for EIA in particular in the new *Environmental Management and Pollution Control Bill* 1993 would achieve better environmental outcomes?

(.....) yes
(.....) no
(.....) don't know

Please add some comments

6 What factors associated with the *Environmental Management and Pollution Control Bill* 1993 are likely to be obstacles, if any, to achieving good environmental outcomes?

(1) the legislation itself
(2) political constraints
    - State politics
    - Local politics
(3) administrative and managerial limitations
    - at State level
    - at the Local level
(4) other factors (please specify)

Added comments or problems, if any, with the Bill would be appreciated

7 In general, do you think the new land-use planning legislative package and the new *Local Government Act* 1993 will contribute to better outcomes in terms of environmental protection?

(.....) yes
(.....) no
(.....) don't know

8 In particular, what are the positive features, in relation to environmental outcomes, of the new land-use planning system? Use the following headings if you wish.

(a) the *State Policies and Project Act* 1993
(b) the *Land Use Planning and Approval Act* 1993

(c) the *Resources Management and Planning Appeal Tribunal Act* 1993

(d) the *Land Use Planning and Approvals (Consequential and Miscellaneous Amendments) Act* 1993

(e) the *Approvals (Deadlines) Act* 1993

(f) the *Local Government Act* 1993

9 What factors associated with the new land-use planning system are likely to be obstacles, if any, to achieving good environmental outcomes?

(1) the legislation itself

(2) political constraints

- State politics
- Local politics

(3) administrative and managerial limitations

- at State level
- at the Local level

(4) other factors (please specify)

Please make added comments on any other problems with the land-use planning package and the *Local Government Act* 1993:

(a) the land-use planning package

(b) the *Local Government Act* 1993

10 Many critics have argued for the integration of land-use planning, on the one hand, and environmental management and pollution control, on the other. Does the new Tasmanian legislation achieves a satisfactory integration of these functions?

(.....) yes

(.....) no

(.....) don't know

Please give specific instances, if possible, of where integration is achieved by the new legislation

11 Would better integration of these processes be fruitful, and how could it be achieved?

12 How do you think the concept of sustainable development came to be incorporated in the new legislation?

13 Is the definition of sustainable development in the legislation a good one?

14 Do you think that sustainable development, as defined in the new laws, will be achieved through their implementation?

APPENDIX 3 SCHEDULE 1: OBJECTIVES OF THE RESOURCE MANAGEMENT AND PLANNING SYSTEM OF TASMANIA

Source: Tasmania, 1993; *Land Use Planning and Approvals Act 1993, No. 70 of 1993*; Tasmania.

1 The objectives of the resource management and planning system of Tasmania are :

(a) to promote the sustainable development of natural and physical resources and the maintenance of ecological processes and genetic diversity; and

(b) to provide for the fair, orderly and sustainable use and development of air, land and water; and

(c) to encourage public involvement in resource management and planning; and

(d) to facilitate economic development in accordance with the objectives set out in paragraphs (a), (b) and (c); and

(e) to promote the sharing of responsibility for resource management and planning between the different spheres of Government, the community and industry in the State.

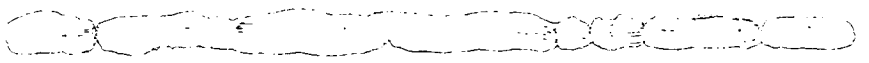
2 In clause 1 (a), "sustainable development' means managing the use, development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic and cultural well-being and for their health and safety while-

(a) sustaining the potential of natural and physical resources to meet the reasonably foreseeable needs of future generations; and

(b) safeguarding the life-supporting capacity of air, water, soil and ecosystems; and

(c) avoiding, remedying or mitigating any adverse effects of activities on the environment.

APPENDIX 4 OBJECTIVES OF THE PLANNING PROCESS ESTABLISHED BY THE *LAND USE PLANNING AND APPROVALS ACT* 1993



Source: Tasmania, 1993; *Land Use Planning and Approvals Act 1993, No. 70 of 1993*; Tasmania.

(a) to require sound strategic planning and co-ordinated action by State and local government; and

(b) to establish a system of planning instruments to be the principal way of setting objectives, policies and controls for the use, development and protection of land; and

(c) to ensure that the effects on the environment are considered and provide for explicit consideration of social and economic effects when decisions are made about the use and development of land; and

(d) to require land use and development planning and policy to be easily interrelated with environmental, social, economic, conservation and resources management policies at State, regional and municipal levels; and

(e) to provide for the consolidation of approvals for land use or development and related matters, and to co-ordinate planning approvals with related approvals; and

(f) to secure a pleasant, efficient and safe working, living and recreational environment for all Tasmanians and visitors to Tasmania; and

(g) to conserve and enhance those buildings, areas or other places which are of scientific, aesthetic, architectural or historical interest, or otherwise of special cultural value; and

(h) to protect public infrastructure and other assets and enable orderly provision and co-ordination of public utilities and other facilities for the benefit of the community.

(i) to provide a planning framework which fully considers land capacity.

APPENDIX 5 SCHEDULE 1: ACTIVITIES OF ENVIRONMENTAL SIGNIFICANCE

Note: This list, in revised form, now appears in the *Environmental Management and Pollution Control Act* 1994 as Schedule 2: Level 2 Activities.

Source: Department of Environment and Land Management, 1993; *Environmental Management and Pollution Control Bill 1993, Explanatory Notes;* Department of Environment and Land Management, Hobart.

1 Petroleum and Chemical

- (a) Chemical Storage and Warehousing Facilities
- (b) Chemical Works
- (c) Coal Processing Works
- (d) Oil Refineries
- (e) Petroleum Production, Storage or Processing Works or Facilities

2 Manufacturing and Mineral Processing

- (a) Cement Works
- (b) Ceramic Works
- (c) Ferrous and Non-ferrous Metal Smelting
- (d) Metallurgical Works
- (e) Mineral Works
- (f) Pulp or Paper Works
- (g) Scrap Metal Recovery
- (h) Wood Processing Works
- (i) Textile Bleaching and Dyeing Factories

3 Waste Treatment and Disposal

- (a) Incineration
- (b) Sewage Treatment Works
- (c) Waste Depots
- (d) Waste Transport Business
- (e) Waste-water Irrigation Schemes
- (f) Sludge Disposal to Land

4 Activities in Specified area

- (a) World Heritage Area

(b) National Park
(c) State Reserves
(e) Coastal Reserves
(f) Protected Areas

5 Animal Husbandry, Aquaculture
(a) Cattle Feedlots
(b) Aquaculture or Fish Farming
(c) Piggeries

6 Food Production and Animal and Plant Product Processing
(a) Abattoirs or Slaughterhouses
(b) Breweries and Distilleries
(c) Composting Works
(d) Fish Processing
(e) Milk Processing Works
(f) Produce Processing Works
(g) Rendering or Fat Extraction Works
(h) Tanneries or Fellmongeries
(i) Woolscouring or Wool Carbonizing Works

7 Extractive Industries
(a) Quarries
(b) Mines

8 Materials Handling
(a) Crushing, Grinding or Milling
(b) Dredging
(c) Coal Handling and Washing

9 Other
(a) Fuel Burning
(b) Motor Racing or Testing Venues
(c) Woodchip Mills
(d) Activities Resulting in Significant Air Emissions
(e) Power Stations
(f) Water Treatment Plants
(g) Marinas

APPENDIX 6 PRINCIPLES OF ENVIRONMENTAL IMPACT ASSESSMENT

Note: These principles have been changed in the *Environmental Management and Pollution Control Act* 1994.

Source: Department of Environment and Land Management, 1993; *Environmental Management and Pollution Control Bill 1993, Explanatory Notes;* Department of Environment and Land Management, Hobart.

(1) An environmental impact statement may be required whether the proposal is from the public or the private sector.

(2) A local authority or other assessing authority must provide the proponent with such information as may be required to give clear guidance on the types of proposals likely to attract environmental impact assessment and on the level of assessment required.

(3) The authority must provide each proponent with guidance on the environmental acceptability of potential impacts including the concept of sustainable development, maintenance of human health, relevant local and national standards and guidelines, protocols, codes of practice and any other applicable legal requirements.

(4) the authority must provide with relevance to each proposal that is considered, guidelines or procedure for the generation of guidelines specifying the key issues and other issues which might give rise to public concern together with full details of the process or the environmental impact assessment.

(5) For each proposal the timings for each state of the assessment process are to be specified in consultation between the authority and the proponent.

(6) The level of assessment is to be appropriate to the significance of the proposal to the environment and the likely public interest in the proposal.

(7) The responsibility for preparation of the case required for assessment of the proposal lies with the proponent; likewise for elaborating environmental issues which are to be taken into account in making a decision and for the protection of the environment.

(8) There is to be full public disclosure of all information relating to the environmental impact of a proposal, except in a case where there is a legitimate reason for confidentiality or a national security interest.

(9) An opportunity is to be provided for appropriate and adequate public consultation on environmental aspects of the proposal before the assessment process is complete.

(10) Procedures are to be developed with a view to resolving any conflict of dispute which may arise for consideration during the course of the assessment processes.

(11) The process for the assessment is to provide a means for setting environmental conditions and also to establish means for environmental monitoring and programs for management and arrangements for review and for developing guidelines in respect of an industry which may be applied in specific cases.